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Val Ala Lys Thr Ser Ala Ala Gln Ala Ile His Pro Gly Cys Gly Phe				
116	121	126	131	
ctt tca gaa aac atg gaa ttt gct gaa ctt tgt aag caa gaa gga att				607
Leu Ser Glu Asn Met Glu Phe Ala Glu Leu Cys Lys Gln Glu Gly Ile				
132	137	142	147	
att ttt ata ggc cct cct cca tct gca att aga gac atg ggt ata aag				655
Ile Phe Ile Gly Pro Pro Pro Ser Ala Ile Arg Asp Met Gly Ile Lys				
148	153	158	163	
agc aca tcc aaa tcc ata atg gct gct gct gga gta cct gtt gtg gag				703
Ser Thr Ser Lys Ser Ile Met Ala Ala Ala Gly Val Pro Val Val Glu				
164	169	174	179	
ggg tat cat ggt gag gac caa tca gac cag tgc ctg aag gaa cac gcc				751
Gly Tyr His Gly Glu Asp Gln Ser Asp Gln Cys Leu Lys Glu His Ala				
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Arg Arg Ile Gly Tyr Pro Val Met Ile Lys Ala Val Arg Gly Gly Gly				
196	201	206	211	
gga aaa gga atg agg att gtt aga tca gaa caa gaa ttt caa gaa cag				847
Gly Lys Gly Met Arg Ile Val Arg Ser Glu Gln Glu Phe Gln Glu Gln				
212	217	222	227	
tta gag tca gca cgg aga gaa gct aag aag tct ttc aat gat gat gct				895
Leu Glu Ser Ala Arg Arg Glu Ala Lys Lys Ser Phe Asn Asp Asp Ala				
228	233	238	243	
atg ctg atc gag aag ttt gta gac aca ccg agg cat gta gaa gtc cag				943
Met Leu Ile Glu Lys Phe Val Asp Thr Pro Arg His Val Glu Val Gln				
244	249	254	259	
gtg ttt ggt gat cac cat ggc aat gct gtg tac ttg ttt gaa aga gac				991
Val Phe Gly Asp His His Gly Asn Ala Val Tyr Leu Phe Glu Arg Asp				
260	265	270	275	
tgt agt gtg cag agg cga cat cag aag atc att gag gag gcc cca gcg				1039
Cys Ser Val Gln Arg Arg His Gln Lys Ile Ile Glu Glu Ala Pro Ala				
276	281	286	291	
cct ggt att aaa tct gaa gta aga aaa aag ctg gga gaa gct gca gtc				1087
Pro Gly Ile Lys Ser Glu Val Arg Lys Lys Leu Gly Glu Ala Ala Val				
292	297	302	307	
aga gct gct aaa gct gta aat tat gtt gga gca ggg act gtg gag ttt				1135
Arg Ala Ala Lys Ala Val Asn Tyr Val Gly Ala Gly Thr Val Glu Phe				
308	313	318	323	
att atg gac tca aaa cat aat ttc tgt ttc atg gag atg aat aca agg				1183
Ile Met Asp Ser Lys His Asn Phe Cys Phe Met Glu Met Asn Thr Arg				
324	329	334	339	

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Gln	Glu	Glu	Ile	Thr	Leu	Gln	Gly	His	Ala	Phe	Glu	Ala	Arg	Ile	Tyr	
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Ala	Glu	Asp	Pro	Ser	Asn	Asn	Phe	Met	Pro	Val	Ala	Gly	Pro	Leu	Val	
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His	Leu	Ser	Thr	Pro	Arg	Ala	Asp	Pro	Ser	Thr	Arg	Ile	Glu	Thr	Gly	
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Val	Arg	Gln	Gly	Asp	Glu	Val	Ser	Val	His	Tyr	Asp	Pro	Met	Ile	Ala	
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Lys	Leu	Val	Val	Trp	Ala	Ala	Asp	Arg	Gln	Ala	Ala	Leu	Thr	Lys	Leu	
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agg	tac	agc	ctt	cgt	cag	tac	aat	att	gtt	gga	ctg	ccc	acc	aac	att	1567
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Val	His	Thr	Asp	Phe	Ile	Pro	Gln	His	His	Lys	Gln	Leu	Leu	Leu	Ser	
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atc	ctc	aag	gag	aaa	gcc	atg	acc	gac	act	ttc	act	ctt	cag	gca	cat	1759
Ile	Leu	Lys	Glu	Lys	Ala	Met	Thr	Asp	Thr	Phe	Thr	Leu	Gln	Ala	His	
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Asp	Gln	Phe	Ser	Pro	Phe	Ser	Ser	Ser	Ser	Gly	Arg	Arg	Leu	Asn	Ile	
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tcg	tat	acc	aga	aac	atg	act	ctt	aaa	gat	ggt	aaa	aac	aat	gta	gcc	1855
Ser	Tyr	Thr	Arg	Asn	Met	Thr	Leu	Lys	Asp	Gly	Lys	Asn	Asn	Val	Ala	
548					553					558					563	

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Val Glu Trp Arg Asp Ala Thr Glu Lys Asn Lys Glu Phe Leu Pro Arg	
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Leu Gly Ala Thr Ile Glu His Ile Ser Val Ser Pro Ala Gly Asp Leu	
67 72 77 82	
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Phe Cys Thr Ser His Ser Asp Asn Lys Ile Ile Ile Ile His Arg Asn	
83 88 93 98	
ctt gaa gca tcc gca gta att caa ggc cta gtg aaa gat agg agt atc	871
Leu Glu Ala Ser Ala Val Ile Gln Gly Leu Val Lys Asp Arg Ser Ile	
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Phe Thr Gly Leu Met Ile Asp Pro Arg Thr Lys Ala Leu Val Leu Asn	
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Ser Lys Asp Gly Tyr Phe Lys Val Trp Ile Leu Thr Asp Asp Ser Asp	
243 248 253 258	
ata tac aaa aaa gct gtt ggc tgg acc tgt gac ttt gtt ggt agt tat	1351
Ile Tyr Lys Lys Ala Val Gly Trp Thr Cys Asp Phe Val Gly Ser Tyr	
259 264 269 274	
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Trp	Glu	Leu	Lys	Cys	Thr	Phe	Cys	Gln	Arg	Ala	Gly	Lys	Ile	Arg	His		
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cag	cag	gat	gaa	aaa	cta	aac	gaa	act	tta	gag	aat	gag	ctg	gta	caa	2023	
Gln	Gln	Asp	Glu	Lys	Leu	Asn	Glu	Thr	Leu	Glu	Asn	Glu	Leu	Val	Gln		
483					488					493					498		
cta	ccc	tta	aca	gaa	aac	ata	ccc	gca	att	agt	gag	ctt	ctt	cac	act	2071	
Leu	Pro	Leu	Thr	Glu	Asn	Ile	Pro	Ala	Ile	Ser	Glu	Leu	Leu	His	Thr		

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Pro Ala His Val Leu	Pro Ser Ala Ala Phe	Leu Cys Ser Met Phe	Val	
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aat tca ttg ctg ctg	tct aaa gag act aag	agt gct aag gaa att	cct	2167
Asn Ser Leu Leu Leu	Ser Lys Glu Thr Lys	Ser Ala Lys Glu Ile	Pro	
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gaa gat gta gat atg	gaa gaa gaa aaa gaa	agt gaa gat tca gat	gaa	2215
Glu Asp Val Asp Met	Glu Glu Glu Lys Glu	Ser Glu Asp Ser Asp	Glu	
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gaa aat gat ttt acc	gaa aaa gtc cag gat	aca agt aac aca ggt	tta	2263
Glu Asn Asp Phe Thr	Glu Lys Val Gln Asp	Thr Ser Asn Thr Gly	Leu	
563	568	573	578	
gga gaa gac att ata	cat cag ttg tca aaa	tct gaa gaa aaa gaa	ctg	2311
Gly Glu Asp Ile Ile	His Gln Leu Ser Lys	Ser Glu Glu Lys Glu	Leu	
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aga aaa ttt agg aaa	ata gac tac agc tgg	ata gct gcc ctt taa	gcc	2359
Arg Lys Phe Arg Lys	Ile Asp Tyr Ser Trp	Ile Ala Ala Leu *		
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Arg Asn Gly Leu Arg Ser Gln Val Tyr Ala Val Asn Gly Asp Tyr Tyr				
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Val Gly Glu Trp Lys Asp Asn Val Lys His Gly Lys Gly Thr Gln Val				
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Trp Lys Lys Lys Gly Ala Ile Tyr Glu Gly Asp Trp Lys Phe Gly Lys				
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cga gac ggc tac ggc acc ctc agc ctt cct gac caa cag aca gga aag				473
Arg Asp Gly Tyr Gly Thr Leu Ser Leu Pro Asp Gln Gln Thr Gly Lys				
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tgc agg aga gtc tac tca ggc tgg tgg aaa ggt gat aag aaa tcg ggt				521
Cys Arg Arg Val Tyr Ser Gly Trp Trp Lys Gly Asp Lys Lys Ser Gly				
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Tyr Gly Ile Gln Phe Phe Gly Pro Lys Glu Tyr Tyr Glu Gly Asp Trp				
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Cys Gly Ser Gln Arg Ser Gly Trp Gly Arg Met Tyr Tyr Ser Asn Gly				
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gac atc tac gag gga cag tgg gag aac gac aag ccc aac ggg gag ggc				665
Asp Ile Tyr Glu Gly Gln Trp Glu Asn Asp Lys Pro Asn Gly Glu Gly				
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Met Leu Arg Leu Ser Gln Asn Pro Arg Pro *				
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 Arg Gly Leu Val Asn Leu Gln His Leu Ile Val Asn Asn Asn Gln Leu
 121 126 131 136
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Asp Leu Asp Leu Ser Tyr Asn Asn Leu His Gly Leu Pro Trp Asp Ser	
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Val Arg Arg Met Val Asn Leu His Gln Leu Ser Leu Asp His Asn Leu	
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Leu Asp His Ile Ala Glu Gly Thr Phe Ala Asp Leu Gln Lys Leu Ala	
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Cys Gly Ser Pro Gly Gly Leu Lys Gly Arg Tyr Phe Trp His Val Arg	
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Leu Val Gly Asn Ser Ser Arg Thr Ala Val Tyr Asp Asn Gly Thr Pro	
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gct gcc aat gct gcc gga gag gcc acg gcc atg gtg gag gtc tcc atc	1576
Ala Ala Asn Ala Ala Gly Glu Ala Thr Ala Met Val Glu Val Ser Ile	

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gtc cag ctg cca cac ctc agc aac agc acc agc cgc act gca ccc ccc				1624
Val Gln Leu Pro His Leu Ser Asn Ser Thr Ser Arg Thr Ala Pro Pro				
377	382	387	392	
aag tcc cgc ctc tca gac atc act ggc tcc agc aag acc agc cgg gga				1672
Lys Ser Arg Leu Ser Asp Ile Thr Gly Ser Ser Lys Thr Ser Arg Gly				
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ggg gga ggc agt ggg ggc gga gag cct ccc aaa agc ccc ccg gaa cgg				1720
Gly Gly Gly Ser Gly Gly Gly Glu Pro Pro Lys Ser Pro Pro Glu Arg				
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gct gtg ctt gtg tct gaa gtg acc acc acc tcg gcc ctg gtc aag tgg				1768
Ala Val Leu Val Ser Glu Val Thr Thr Thr Ser Ala Leu Val Lys Trp				
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tct gtc agc aag tca gca ccc cgg gtg aag atg tac cag ctg cag tac				1816
Ser Val Ser Lys Ser Ala Pro Arg Val Lys Met Tyr Gln Leu Gln Tyr				
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aac tgc tct gac gat gag gta ctg att tac agg atg atc cca gcc tcc				1864
Asn Cys Ser Asp Asp Glu Val Leu Ile Tyr Arg Met Ile Pro Ala Ser				
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Asn Lys Ala Phe Val Val Asn Asn Leu Val Ser Gly Thr Gly Tyr Asp				
473	478	483	488	
ttg tgt gtg ctg gcc atg tgg gat gac aca gcc acg aca ctc acg gcc				1960
Leu Cys Val Leu Ala Met Trp Asp Asp Thr Ala Thr Thr Leu Thr Ala				
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acc aac atc gtg ggc tgc gcc cag ttc ttc acc aag gct gac tac ccg				2008
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Val Ile Gly Gly Ile Ile Val Ala Thr Leu Leu Val Phe Ile Val Ile				
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Leu Met Val Arg Tyr Lys Val Cys Asn His Glu Ala Pro Ser Lys Met				
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Ala Ala Ala Val Ser Asn Val Tyr Ser Gln Thr Asn Gly Ala Gln Pro				
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ccg cct cca agc agc gca cca gcc ggg gcc ccg ccg cag ggc ccg ccg				2248
Pro Pro Pro Ser Ser Ala Pro Ala Gly Ala Pro Pro Gln Gly Pro Pro				
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Gly	Arg	Gly	Ala	Gly	Thr	Ser	Ala	Arg	Gly	His	His	Ser	Asp	Arg	Glu	
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cca	ctg	ctg	ggg	ccc	cct	gcg	gcc	cgg	gcc	agg	agc	ctg	ctc	ccc	ttg	2584
Pro	Leu	Leu	Gly	Pro	Pro	Ala	Ala	Arg	Ala	Arg	Ser	Leu	Leu	Pro	Leu	
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ccg	ttg	gag	ggc	aag	gcc	aaa	cgc	agc	cac	tcc	ttc	gac	atg	ggg	gac	2632
Pro	Leu	Glu	Gly	Lys	Ala	Lys	Arg	Ser	His	Ser	Phe	Asp	Met	Gly	Asp	
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Phe	Ala	Ala	Ala	Ala	Ala	Gly	Gly	Val	Val	Pro	Gly	Gly	Tyr	Ser	Pro	
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cct	cgg	aag	gtc	tcg	aac	atc	tgg	acg	aag	cgc	agc	ctc	tct	gtc	aac	2728
Pro	Arg	Lys	Val	Ser	Asn	Ile	Trp	Thr	Lys	Arg	Ser	Leu	Ser	Val	Asn	
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Gly	Met	Leu	Leu	Pro	Phe	Glu	Glu	Ser	Asp	Leu	Val	Gly	Ala	Arg	Gly	
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cgcgggcgag cctgcgctgg gccggccgag ggtcaagggtg gaagggtccaa ggactgagaa      180
agaccctcga aggcattccac tttagtcctc cattccattc ctagagactg atcaggagtc      240
aggcttcaga aggagtcccc tggaaggcct ccacaacctc acgctagagt caaga atg      298
                                     Met
                                     1
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Asp Met Phe Ser Leu Asp Met Ile Ile Ser Asp Pro Ala Ala Glu Ala
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agc agg gct ggg aag aag cag ctc aga ggt gtt cag aac cct tgc cca      394
Ser Arg Ala Gly Lys Lys Gln Leu Arg Gly Val Gln Asn Pro Cys Pro
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tct gcc aga gcc aga ccc cgg cac aag tcc ctc aac ata aag gac aag      442
Ser Ala Arg Ala Arg Pro Arg His Lys Ser Leu Asn Ile Lys Asp Lys
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Ile Ser Glu Trp Glu Gly Lys Lys Glu Val Pro Thr Pro Ala Pro Ser
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agg agg agt agt gat ggg gtg aga act cag gtc aca gag gct aag aat      586
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gga atg agg cca gga aca gag agc aca gag aag gag agg aat aaa gga      634
Gly Met Arg Pro Gly Thr Glu Ser Thr Glu Lys Glu Arg Asn Lys Gly
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gca gtg aac gtc ggg gga cag gac cca gag ccg ggg caa gac cta agc      682
Ala Val Asn Val Gly Gly Gln Asp Pro Glu Pro Gly Gln Asp Leu Ser
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cag cca gaa cgg gaa gtg gat cct agc tgg ggc cga ggc cga gag cca      730
Gln Pro Glu Arg Glu Val Asp Pro Ser Trp Gly Arg Gly Arg Glu Pro
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aga ctt ggc aag cta cgc ttt cag aac gat cac ctc tcc gtg ctg aag      778
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Pro Ala Ser Pro Thr Ser Ser Ile Pro Asp Thr Leu Thr Lys Gln Ser	
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Leu Ser Lys Pro Ala Phe Phe Arg Gln Asn Ser Glu Arg Arg Asn Phe	
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Lys Leu Leu Asp Thr Arg Lys Leu Ser Arg Asp Gly Thr Gly Ser Pro	
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Ser Lys Ile Ser Pro Pro Ser Thr Pro Ser Ser Pro Asp Asp Ile Phe	
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Phe Asn Leu Gly Asp Pro Gln Asn Gly Arg Lys Lys Arg Lys Ile Pro	
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Lys Arg Val Lys Arg Leu Ser Gln Ser Met Glu Ser Asn Ser Gly Lys	
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Val Thr Asp Glu Asn Ser Glu Ser Asp Ser Asp Thr Glu Glu Lys Leu	
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Leu Glu Arg Ser Phe Lys Phe Met Arg Glu Ala Glu Asp Gln Leu Lys	
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Gly	Lys	Arg	Leu	Pro	Glu	Val	Tyr	Cys	Ile	Val	Ser	Arg	Leu	Gly	Cys		
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Gly	Ser	Gly	Thr	Glu	Val	Ile	Glu	Leu	Cys	Arg	Pro	Leu	Asp	Ser	Arg		
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His	Leu	Val	Cys	Val	Phe	Ala	Ser	Leu	Leu	Leu	Glu	Arg	Arg	Val	Ile		
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Phe	Ile	Ala	Asp	Lys	Leu	Ser	Ile	Leu	Ser	Lys	Cys	Cys	His	Ala	Met		
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Val	Ala	Leu	Ile	Tyr	Pro	Phe	Ala	Trp	Gln	His	Thr	Tyr	Ile	Pro	Val		
786					791					796					801		
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Ile	Gly	Leu	Leu	Ser	Ser	Ser	Leu	Pro	Leu	Leu	Arg	Glu	Leu	Pro	Leu		
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gaa	gag	gtc	ctt	gtg	gtt	gac	ctc	gtc	aac	agc	cgg	ttc	ctc	aga	cag	2842	
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Lys Phe Ile Lys Ile Ala Ala Leu Cys Lys Gln Asn Gln Asp Leu Leu	
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Ser Phe Tyr Ala Val Val Met Gly Leu Asp Asn Ala Ala Val Ser Arg	
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Leu Arg Leu Thr Trp Glu Lys Leu Pro Gly Lys Phe Lys Asn Leu Phe	

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Arg Lys Phe Glu Asn Leu Thr Asp Pro Cys Arg Asn His Lys Ser Tyr				
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Arg Glu Val Ile Ser Lys Met Lys Pro Pro Val Ile Pro Phe Val Pro				
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Leu Ile Leu Lys Asp Leu Thr Phe Leu His Glu Gly Ser Lys Thr Leu				
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gta gat ggt ttg gtg aac atc gag aag ctg cat tca gtg gcc gaa aaa				1735
Val Asp Gly Leu Val Asn Ile Glu Lys Leu His Ser Val Ala Glu Lys				
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Val Arg Thr Ile Arg Lys Tyr Arg Ser Arg Pro Leu Cys Leu Asp Met				
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Glu Ala Ser Pro Asn His Leu Gln Thr Lys Ala Tyr Val Arg Gln Phe				
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Gln Val Ile Asp Asn Gln Asn Leu Leu Phe Glu Leu Ser Tyr Lys Leu				
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Gly His Leu Asp Val Val Ala Leu Leu Ile Asn His Gly Ala Glu Val						
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Thr Cys Lys Asp Lys Lys Gly Tyr Thr Pro Leu His Ala Ala Ala Ser						
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Ile Asp Glu Ile Asn Val Tyr Gly Asn Thr Ala Leu His Ile Ala Cys						
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Tyr Asn Gly Gln Asp Ala Val Val Asn Glu Leu Ile Asp Tyr Gly Ala						
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Ala Ala Ser Thr His Gly Ala Leu Cys Leu Glu Leu Leu Val Asn Asn						
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Gly Ala Asp Val Asn Ile Gln Ser Lys Asp Gly Lys Ser Pro Leu His						
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Met Thr Ala Val His Gly Arg Phe Thr Arg Ser Gln Thr Leu Ile Gln						
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Leu His Leu Ala Ala Leu Asn Ala His Ser Asp Cys Cys Arg Lys Leu				
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tta tca tcg gga caa aag tat agc ata gta tcc ttg ttt agt aat gag				1130
Leu Ser Ser Gly Gln Lys Tyr Ser Ile Val Ser Leu Phe Ser Asn Glu				
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cac gtg ctg tct gca ggc ttt gaa ata gac acc cca gat aaa ttt gga				1178
His Val Leu Ser Ala Gly Phe Glu Ile Asp Thr Pro Asp Lys Phe Gly				
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aga acg tgc ctt cat gct gct gct gca gga ggt aat gtg gaa tgt ata				1226
Arg Thr Cys Leu His Ala Ala Ala Ala Gly Gly Asn Val Glu Cys Ile				
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Asn Lys Thr Ile Leu Gly Asn Ala His Asp Asn Ser Glu Glu Leu Glu				
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Ala Thr Lys Ser Pro Leu His Leu Ala Ala Tyr Asn Gly His His Gln				
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His Thr Leu Cys Leu Arg Leu Leu Leu Glu Ile Ala Asp Asn Pro Glu	
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526 531 536 541	
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Thr Pro Leu His Trp Ala Cys Tyr Asn Gly Asn Glu Asn Cys Ile Glu	
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Val Leu Leu Glu Gln Lys Cys Phe Arg Lys Phe Ile Gly Asn Pro Phe	
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Cys Leu Gln Leu Leu Leu Arg His Ser Ala Pro Val Asn Ala Val Asp	
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103 108 113 118
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Gln Thr Arg Arg Arg Asp Asp Lys Glu Leu Asp Thr Ala Ile Arg Glu	
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263 268 273 278	
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1																
ata	tta	gca	tcc	aac	acc	atg	gac	tcc	caa	atg	cta	gcg	tcc	aac	acc	96

Ile	Leu	Ala	Ser	Asn	Thr	Met	Asp	Ser	Gln	Met	Leu	Ala	Ser	Asn	Thr		
17					22					27					32		
atg	gac	tcc	cag	atg	cta	gca	tcc	aac	acc	atg	gac	tcc	cag	atg	tta		144
Met	Asp	Ser	Gln	Met	Leu	Ala	Ser	Asn	Thr	Met	Asp	Ser	Gln	Met	Leu		
33					38					43					48		
gcg	tct	agc	acc	atg	gac	tcc	cag	atg	tta	gca	act	agc	tcc	atg	gac		192
Ala	Ser	Ser	Thr	Met	Asp	Ser	Gln	Met	Leu	Ala	Thr	Ser	Ser	Met	Asp		
49					54					59					64		
tcc	caa	atg	cta	gcg	tcc	aac	acc	atg	gac	tcc	cag	atg	cta	gca	tcc		240
Ser	Gln	Met	Leu	Ala	Ser	Asn	Thr	Met	Asp	Ser	Gln	Met	Leu	Ala	Ser		
65					70					75					80		
aac	acc	atg	gac	tcc	cag	atg	tta	gcg	tct	agc	acc	atg	gac	tcc	cag		288
Asn	Thr	Met	Asp	Ser	Gln	Met	Leu	Ala	Ser	Ser	Thr	Met	Asp	Ser	Gln		
81					86					91					96		
atg	tta	gca	act	agc	tcc	atg	gac	tcc	cag	atg	tta	gca	act	agc	tcc		336
Met	Leu	Ala	Thr	Ser	Ser	Met	Asp	Ser	Gln	Met	Leu	Ala	Thr	Ser	Ser		
97					102					107					112		
atg	gac	tcc	cag	atg	tta	gca	act	agc	act	atg	gac	tcc	cag	atg	tta		384
Met	Asp	Ser	Gln	Met	Leu	Ala	Thr	Ser	Thr	Met	Asp	Ser	Gln	Met	Leu		
113					118					123					128		
gca	acc	agt	tcc	atg	gac	tcc	cag	atg	tta	gca	acc	agc	tcc	atg	gac		432
Ala	Thr	Ser	Ser	Met	Asp	Ser	Gln	Met	Leu	Ala	Thr	Ser	Ser	Met	Asp		
129					134					139					144		
tcc	cag	atg	tta	gca	acc	agc	tcc	atg	gac	tcc	cag	atg	tta	gca	acc		480
Ser	Gln	Met	Leu	Ala	Thr	Ser	Ser	Met	Asp	Ser	Gln	Met	Leu	Ala	Thr		
145					150					155					160		
agc	tcc	atg	gac	tcc	cag	atg	tta	gca	acc	agc	acc	atg	gat	tct	cag		528
Ser	Ser	Met	Asp	Ser	Gln	Met	Leu	Ala	Thr	Ser	Thr	Met	Asp	Ser	Gln		
161					166					171					176		
atg	tta	gca	acc	agc	acc	atg	gac	tcc	cag	atg	tta	gca	act	agc	tca		576
Met	Leu	Ala	Thr	Ser	Thr	Met	Asp	Ser	Gln	Met	Leu	Ala	Thr	Ser	Ser		
177					182					187					192		
atg	gat	tcc	cag	atg	tta	gca	tct	ggc	act	atg	gac	tct	caa	atg	tta		624
Met	Asp	Ser	Gln	Met	Leu	Ala	Ser	Gly	Thr	Met	Asp	Ser	Gln	Met	Leu		
193					198					203					208		
gct	tct	ggc	acc	atg	gat	gct	cag	atg	tta	gcg	tct	ggc	acc	atg	gat		672
Ala	Ser	Gly	Thr	Met	Asp	Ala	Gln	Met	Leu	Ala	Ser	Gly	Thr	Met	Asp		
209					214					219					224		
gcc	cag	atg	tta	gcg	tct	agt	acc	caa	gat	tct	gct	atg	ttg	ggc	tca		720
Ala	Gln	Met	Leu	Ala	Ser	Ser	Thr	Gln	Asp	Ser	Ala	Met	Leu	Gly	Ser		
225					230					235					240		
aaa	tct	cct	gat	ccc	tat	agg	tta	gct	cag	gat	cct	tac	agg	tta	gct		768
Lys	Ser	Pro	Asp	Pro	Tyr	Arg	Leu	Ala	Gln	Asp	Pro	Tyr	Arg	Leu	Ala		

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cag gat ccc tat agg ttg ggc cat gac ccc tat aga tta ggt cat gat				816
Gln Asp Pro Tyr Arg Leu Gly His Asp Pro Tyr Arg Leu Gly His Asp				
257	262	267	272	
gct tac agg tta gga caa gac cct tat aga tta ggc cat gat ccc tac				864
Ala Tyr Arg Leu Gly Gln Asp Pro Tyr Arg Leu Gly His Asp Pro Tyr				
273	278	283	288	
aga cta act cct gat ccc tat agg atg tca cct aga ccc tac agg ata				912
Arg Leu Thr Pro Asp Pro Tyr Arg Met Ser Pro Arg Pro Tyr Arg Ile				
289	294	299	304	
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Ala Pro Arg Ser Tyr Arg Ile Ala Pro Arg Pro Tyr Arg Leu Ala Pro				
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Arg Pro Leu Met Leu Ala Ser Arg Arg Ser Met Met Met Ser Tyr Ala				
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Ala Glu Arg Ser Met Met Ser Ser Tyr Glu Arg Ser Met Met Ser Tyr				
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Glu Arg Ser Met Met Ser Pro Met Ala Glu Arg Ser Met Met Ser Ala				
353	358	363	368	
tac gag cgc tct atg atg tca gcc tac gag cgc tct atg atg tcc cct				1152
Tyr Glu Arg Ser Met Met Ser Ala Tyr Glu Arg Ser Met Met Ser Pro				
369	374	379	384	
atg gct gag cgc tct atg atg tca gct tat gaa cgc tcc atg atg tca				1200
Met Ala Glu Arg Ser Met Met Ser Ala Tyr Glu Arg Ser Met Met Ser				
385	390	395	400	
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Ala Tyr Glu Arg Ser Met Met Ser Pro Met Ala Asp Arg Ser Met Met				
401	406	411	416	
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Ser Met Gly Ala Asp Arg Ser Met Met Ser Ser Tyr Ser Ala Ala Asp				
417	422	427	432	
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Arg Ser Met Met Ser Ser Tyr Ser Ala Ala Asp Arg Ser Met Met Ser				
433	438	443	448	
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Ser Tyr Thr Ala Asp Arg Ser Met Met Ser Met Ala Ala Asp Ser Tyr				
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Thr Asp Ser Tyr Thr Asp Thr Tyr Thr Glu Ala Tyr Met Val Pro Pro				
465	470	475	480	

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Leu Pro Pro Glu Glu Pro Pro Thr Met Pro Pro Leu Pro Pro Glu Glu	
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Pro Pro Met Thr Pro Pro Leu Pro Pro Glu Glu Pro Pro Glu Gly Pro	
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Ala Leu Pro Thr Glu Gln Ser Ala Leu Thr Ala Glu Asn Thr Trp Pro	
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Thr Glu Val Pro Ser Leu Pro Ser Glu Glu Ser Val Ser Gln Pro Glu	
529 534 539 544	
cct cct gtg agt caa agt gag att tcg gag cct tca gca gtg cct act	1680
Pro Pro Val Ser Gln Ser Glu Ile Ser Glu Pro Ser Ala Val Pro Thr	
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Asp Tyr Ser Val Ser Ala Ser Asp Pro Ser Val Leu Val Ser Glu Ala	
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Ala Val Thr Val Pro Glu Pro Pro Pro Glu Pro Glu Ser Ser Ile Thr	
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Leu Thr Pro Val Glu Ser Ala Val Val Ala Glu Glu His Glu Val Val	
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Pro Glu Arg Pro Val Thr Cys Met Val Ser Glu Thr Pro Ala Met Ser	
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625 630 635 640	
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657 662 667 672	
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Glu Ser Ile Leu Glu Pro Pro Ala Met Ala Ala Pro Glu Ser Ser Ala	
673 678 683 688	
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Met Ala Val Leu Glu Ser Ser Ala Val Thr Val Leu Glu Ser Ser Thr	
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gaa cac ctg aaa ggt gac ttt tac gaa agt gaa cat ggt ata aat ata Glu His Leu Lys Gly Asp Phe Tyr Glu Ser Glu His Gly Ile Asn Ile 849 854 859 864	2592
gac ctt aat ata aat agt cat tta att gct aaa gag atg gaa cat aat Asp Leu Asn Ile Asn Ser His Leu Ile Ala Lys Glu Met Glu His Asn 865 870 875 880	2640
aca gtg tgt gct gct ggt act agt cct gtt ggg gaa att ggt gaa gag Thr Val Cys Ala Ala Gly Thr Ser Pro Val Gly Glu Ile Gly Glu Glu 881 886 891 896	2688
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tac cct ggt gtt agt gaa gct gat gca gga gaa act cta tct tct act Tyr Pro Gly Val Ser Glu Ala Asp Ala Gly Glu Thr Leu Ser Ser Thr 913 918 923 928	2784
ggc cct ttt gct ctg gaa cct gat gca aca gga act agt aag ggt att	2832

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Glu	Phe	Thr	Thr	Ala	Ser	Thr	Leu	Ser	Leu	Val	Asn	Lys	Tyr	Asp	Val	
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gat	tta	tct	tta	act	act	caa	gat	act	gaa	cat	gac	atg	gta	ata	att	2928
Asp	Leu	Ser	Leu	Thr	Thr	Gln	Asp	Thr	Glu	His	Asp	Met	Val	Ile	Ile	
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tcc	acc	agt	cct	agt	ggg	ggg	agt	gaa	gct	gac	att	gaa	ggg	cct	ttg	2976
Ser	Thr	Ser	Pro	Ser	Gly	Gly	Ser	Glu	Ala	Asp	Ile	Glu	Gly	Pro	Leu	
977					982					987					992	
cct	gct	aaa	gat	att	cat	ctt	gat	tta	cca	tct	aat	aat	aac	ctt	gtt	3024
Pro	Ala	Lys	Asp	Ile	His	Leu	Asp	Leu	Pro	Ser	Asn	Asn	Asn	Leu	Val	
993					998					1003					1008	
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Ser	Lys	Asp	Thr	Glu	Glu	Pro	Leu	Pro	Val	Lys	Glu	Ser	Asp	Gln	Thr	
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ata	gca	gcc	ttg	ctc	agc	cct	aaa	gaa	agt	agt	gga	gga	gaa	aaa	gaa	3120
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Val	Pro	Pro	Pro	Pro	Lys	Glu	Thr	Leu	Pro	Asp	Ser	Gly	Phe	Ser	Ala	
1041					1046					1051					1056	
aat	att	gag	gat	att	aat	gaa	gca	gat	tta	gtg	aga	ccg	tta	ctt	cct	3216
Asn	Ile	Glu	Asp	Ile	Asn	Glu	Ala	Asp	Leu	Val	Arg	Pro	Leu	Leu	Pro	
1057					1062					1067					1072	
aag	gac	atg	gaa	cgt	ctt	aca	agc	ctt	aga	gct	ggc	att	gaa	gga	cct	3264
Lys	Asp	Met	Glu	Arg	Leu	Thr	Ser	Leu	Arg	Ala	Gly	Ile	Glu	Gly	Pro	
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tta	ctt	gca	agt	gat	gtt	gga	cgt	gac	aga	tct	gct	gcc	agc	ccg	gtt	3312
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Val	Ser	Ser	Met	Pro	Glu	Arg	Ala	Ser	Glu	Ser	Ser	Ser	Glu	Glu	Lys	
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Asp	Asp	Tyr	Glu	Ile	Phe	Val	Lys	Val	Lys	Asp	Thr	His	Glu	Lys	Ser	
1121					1126					1131					1136	
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Pro	His	Leu	Arg	Ser	Arg	Ser	Lys	Arg	Ser	Lys	Ser	Ser	Glu	His	Lys	

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Ser Lys Ser Lys Ser His Arg Ser Gln Thr Arg Ser Arg Ser Arg Ser				
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Lys Ser Arg Glu Arg Lys Arg Lys Arg Ser Ser Ser Arg Asp Asn Arg				
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Lys Thr Val Arg Ala Arg Ser Arg Thr Pro Ser Arg Arg Ser Arg Ser				
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His Thr Pro Ser Arg Arg Arg Arg Ser Arg Ser Val Gly Arg Arg Arg				
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Ser Phe Ser Ile Ser Pro Ser Arg Arg Ser Arg Thr Pro Ser Arg Arg				
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agc cgc acc ccc agc cgc cgc agc cgc acc ccc agc cgc cgc cgc				3936
Ser Arg Thr Pro Ser Arg Arg Ser Arg Thr Pro Ser Arg Arg Ser Arg				
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Thr Pro Ser Arg Arg Ser Arg Thr Pro Ser Arg Arg Ser Arg Thr Pro				
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Ile Ser Pro Val Arg Leu Arg Arg Ser Arg Thr Pro Leu Arg Arg Arg				
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Phe Ser Arg Ser Pro Ile Arg Arg Lys Arg Ser Arg Ser Ser Glu Arg				
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Gly Arg Ser Pro Lys Arg Leu Thr Asp Leu Asp Lys Ala Gln Leu Leu				
1377	1382	1387	1392	

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Glu Ile Ala Lys Ala Asn Ala Ala Ala Met Cys Ala Lys Ala Gly Val	
1393 1398 1403 1408	
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Pro Leu Pro Pro Asn Leu Lys Pro Ala Pro Pro Pro Thr Ile Val Glu	
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Lys Val Ala Lys Lys Ser Gly Gly Ala Thr Ile Glu Glu Leu Thr Glu	
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Lys Cys Lys Gln Ile Ala Gln Ser Lys Glu Asp Asp Asp Val Ile Val	
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Asn Lys Pro His Val Ser Asp Glu Glu Glu Glu Glu Pro Pro Phe Tyr	
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cat cat ccc ttt aaa ctc agt gaa ttt aaa cct att ttt ttc aat ctg	4464
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Asn Ile Ala Ala Ala Lys Pro Thr Pro Pro Lys Ser Gln Val Thr Leu	
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Thr Lys Glu Phe Pro Val Ser Ser Gly Ser Gln His Arg Lys Lys Glu	
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Ala Asp Ser Val Tyr Gly Glu Trp Val Pro Val Glu Lys Asn Gly Glu	
1521 1526 1531 1536	
gaa aac aaa gat gat gat aat gtt ttc agc agc aat ttg ccc tca gag	4656
Glu Asn Lys Asp Asp Asp Asn Val Phe Ser Ser Asn Leu Pro Ser Glu	
1537 1542 1547 1552	
cct gtg gac atc tct aca gca atg agt gaa cgg gca ctt gct cag aaa	4704
Pro Val Asp Ile Ser Thr Ala Met Ser Glu Arg Ala Leu Ala Gln Lys	
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Arg Leu Ser Glu Asn Ala Phe Asp Leu Glu Ala Met Ser Met Leu Asn	
1569 1574 1579 1584	
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Arg Ala Gln Glu Arg Ile Asp Ala Trp Ala Gln Leu Asn Ser Ile Pro	
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Gly Gln Phe Thr Gly Ser Thr Gly Val Gln Val Leu Thr Gln Glu Gln	
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Leu Ala Asn Thr Gly Ala Gln Ala Trp Ile Lys Lys Asp Gln Phe Leu	
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Arg Ala Ala Pro Val Thr Gly Gly Met Gly Ala Val Leu Met Arg Lys	
1633 1638 1643 1648	
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Met Gly Trp Arg Glu Gly Glu Gly Leu Gly Lys Asn Lys Glu Gly Asn	
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Met Lys Asp Leu Ser Gly Lys His Pro Val Ser Ala Leu Met Glu Ile	
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Cys Asn Lys Arg Arg Trp Gln Pro Pro Glu Phe Leu Leu Val His Asp	
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agt ggc cct gat cat cgc aaa cat ttt ctc ttt agg gta ttg ata aat	5232
Ser Gly Pro Asp His Arg Lys His Phe Leu Phe Arg Val Leu Ile Asn	
1729 1734 1739 1744	
gga agc gct tac cag ccc agc ttt gcc agc cct aat aag aag cat gct	5280
Gly Ser Ala Tyr Gln Pro Ser Phe Ala Ser Pro Asn Lys Lys His Ala	
1745 1750 1755 1760	
aaa gcc aca gca gct act gtg gtt ctt caa gca atg ggc ctt gta cca	5328
Lys Ala Thr Ala Ala Thr Val Val Leu Gln Ala Met Gly Leu Val Pro	
1761 1766 1771 1776	
aag gac ctc atg gct aat gcc act tgc ttc agg agt gcc tca cgt aga	5376
Lys Asp Leu Met Ala Asn Ala Thr Cys Phe Arg Ser Ala Ser Arg Arg	
1777 1782 1787 1792	
tag attg aggttttata ataatcattt cagaatttta ctctgcatca caatgtattt	5433
*	
1793	
cctctttaat gttgtaaata tttggcaatt taagacattg tgtaaaaagc aatctgtaaa	5493
aacatctcca ggcttttgatt tttgtaccat ggaaattgta ttttaaccata cagggttttg	5553
gtatgtttat attgtttacc ttagtgatgt atttgtttta gtggctaaca tccaaacgac	5613
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 Met Glu Gly Ile
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agt aat ttc aag aca cca agc aaa tta tca gaa aaa aag aaa tct gta 162
 Ser Asn Phe Lys Thr Pro Ser Lys Leu Ser Glu Lys Lys Lys Ser Val
 5 10 15 20

tta tgt tca act cca act ata aat atc ccg gcc tct ccg ttt atg cag 210
 Leu Cys Ser Thr Pro Thr Ile Asn Ile Pro Ala Ser Pro Phe Met Gln
 21 26 31 36

aag ctt ggc ttt ggt act ggg gta aat gtg tac cta atg aaa aga tct 258
 Lys Leu Gly Phe Gly Thr Gly Val Asn Val Tyr Leu Met Lys Arg Ser
 37 42 47 52

cca aga ggt ttg tct cat tct cct tgg gct gta aaa aag att aat cct 306
 Pro Arg Gly Leu Ser His Ser Pro Trp Ala Val Lys Lys Ile Asn Pro
 53 58 63 68

ata tgt aat gat cat tat cga agt gtg tat caa aag aga cta atg gat 354

Ile	Cys	Asn	Asp	His	Tyr	Arg	Ser	Val	Tyr	Gln	Lys	Arg	Leu	Met	Asp		
69					74					79					84		
gaa	gct	aag	att	ttg	aaa	agc	ctt	cat	cat	cca	aac	att	gtt	ggt	tat	402	
Glu	Ala	Lys	Ile	Leu	Lys	Ser	Leu	His	His	Pro	Asn	Ile	Val	Gly	Tyr		
85					90					95					100		
cgt	gct	ttt	act	gaa	gcc	aat	gat	ggc	agt	ctg	tgt	ctt	gct	atg	gaa	450	
Arg	Ala	Phe	Thr	Glu	Ala	Asn	Asp	Gly	Ser	Leu	Cys	Leu	Ala	Met	Glu		
101					106					111					116		
tat	gga	ggt	gaa	aag	tct	cta	aat	gac	tta	ata	gaa	gaa	cga	tat	aaa	498	
Tyr	Gly	Gly	Glu	Lys	Ser	Leu	Asn	Asp	Leu	Ile	Glu	Glu	Arg	Tyr	Lys		
117					122					127					132		
gcc	agc	caa	gat	cct	ttt	cca	gca	gcc	ata	att	tta	aaa	ggt	gct	ttg	546	
Ala	Ser	Gln	Asp	Pro	Phe	Pro	Ala	Ala	Ile	Ile	Leu	Lys	Val	Ala	Leu		
133					138					143					148		
aat	atg	gca	aga	ggg	tta	aag	tat	ctg	cac	caa	gaa	aag	aaa	ctg	ctt	594	
Asn	Met	Ala	Arg	Gly	Leu	Lys	Tyr	Leu	His	Gln	Glu	Lys	Lys	Leu	Leu		
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cat	gga	gac	ata	aag	tct	tca	aat	gtt	gta	att	aaa	ggc	gat	ttt	gaa	642	
His	Gly	Asp	Ile	Lys	Ser	Ser	Asn	Val	Val	Ile	Lys	Gly	Asp	Phe	Glu		
165					170					175					180		
aca	att	aaa	atc	tgt	gat	gta	gga	gtc	tct	cta	cca	ctg	gat	gaa	aat	690	
Thr	Ile	Lys	Ile	Cys	Asp	Val	Gly	Val	Ser	Leu	Pro	Leu	Asp	Glu	Asn		
181					186					191					196		
atg	act	gtg	act	gac	cct	gag	gct	tgt	tac	att	ggc	aca	gag	cca	tgg	738	
Met	Thr	Val	Thr	Asp	Pro	Glu	Ala	Cys	Tyr	Ile	Gly	Thr	Glu	Pro	Trp		
197					202					207					212		
aaa	ccc	aaa	gaa	gct	gtg	gag	gag	aat	ggt	gtt	att	act	gac	aag	gca	786	
Lys	Pro	Lys	Glu	Ala	Val	Glu	Glu	Asn	Gly	Val	Ile	Thr	Asp	Lys	Ala		
213					218					223					228		
gac	ata	ttt	gcc	ttt	ggc	ctt	act	ttg	tgg	gaa	atg	atg	act	tta	tcg	834	
Asp	Ile	Phe	Ala	Phe	Gly	Leu	Thr	Leu	Trp	Glu	Met	Met	Thr	Leu	Ser		
229					234					239					244		
att	cca	cac	att	aat	ctt	tca	aat	gat	gat	gat	gat	gaa	gat	aaa	act	882	
Ile	Pro	His	Ile	Asn	Leu	Ser	Asn	Asp	Asp	Asp	Asp	Glu	Asp	Lys	Thr		
245					250					255					260		
ttt	gat	gaa	agt	gat	ttt	gat	gat	gaa	gca	tac	tat	gca	gcg	ttg	gga	930	
Phe	Asp	Glu	Ser	Asp	Phe	Asp	Asp	Glu	Ala	Tyr	Tyr	Ala	Ala	Leu	Gly		
261					266					271					276		
act	agg	cca	cct	att	aat	atg	gaa	gaa	ctg	gat	gaa	tca	tac	cag	aaa	978	
Thr	Arg	Pro	Pro	Ile	Asn	Met	Glu	Glu	Leu	Asp	Glu	Ser	Tyr	Gln	Lys		
277					282					287					292		
gta	att	gaa	ctc	ttc	tct	gta	tgc	act	aat	gaa	gac	cct	aaa	gat	cgt	1026	
Val	Ile	Glu	Leu	Phe	Ser	Val	Cys	Thr	Asn	Glu	Asp	Pro	Lys	Asp	Arg		

293	298	303	308	
cct tct gct gca cac att gtt gaa gct ctg gaa aca gat gtc tag tga				1074
Pro Ser Ala Ala His Ile Val Glu Ala Leu Glu Thr Asp Val *				
309	314	319		
tcatctcagc tgaagtgtgg cttgcataaa taactgttta ttccaaaata tttacatagt				1134
tactatcagt agttattaga ctctaaaatt ggcatatttg aggaccatag tttcttggtta				1194
acatatggat aactatttct aatatgaaat atgcttatat tggctataag cacttggaat				1254
tgtactgggt tttctgtaaa gttttagaaa ctagctacat aagtactttg atactgctca				1314
tgctgactta aaacactagc agtaaaacgc tgtaaactgt aacattaaat tgaatgacca				1374
ttacttttat taatgatctt tcttaaatat tctatatattt aatggatcta ctgacattag				1434
cactttgtac agtacaaaat aaagtctaca tttgtttaaa acaaaaaaaaa aaaaaaaaaa				1494
ttgcgggcgc tctagagtat ccctcaaaga ggccaagct tacgcgtacc cagctttctt				1554
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cagactgctg cagccctaac cttcccaggg ctcagctctt tggagctgcc cattcctccg				180
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agg ttc ccg aag gcc gac ctg gcc gct gca gga gtt atg tta ctt tgc Arg Phe Pro Lys Ala Asp Leu Ala Ala Gly Val Met Leu Leu Cys 3 8 13 18	823
cac ttc ttc acg gac cag ttt cag ttc gcc gat ggg aaa ccc gga gac His Phe Phe Thr Asp Gln Phe Gln Phe Ala Asp Gly Lys Pro Gly Asp 19 24 29 34	871
caa atc ctt gat tgg cag tat gga gtt act cag gcc ttc cct cac aca Gln Ile Leu Asp Trp Gln Tyr Gly Val Thr Gln Ala Phe Pro His Thr 35 40 45 50	919
gag gag gag gtg gaa gtt gat tca cac gcg tac agc cac agg tgg aaa Glu Glu Glu Val Glu Val Asp Ser His Ala Tyr Ser His Arg Trp Lys 51 56 61 66	967
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tac tat ata tct cga ata tat ggt cca tct gat tct gcc agc cgg gat Tyr Tyr Ile Ser Arg Ile Tyr Gly Pro Ser Asp Ser Ala Ser Arg Asp 115 120 125 130	1159
tta tgg gtg aac ata gac caa atg gaa aaa gat aaa gtg aag att cat Leu Trp Val Asn Ile Asp Gln Met Glu Lys Asp Lys Val Lys Ile His 131 136 141 146	1207
gga ata ttg tcc aat act cat cgg caa gct gca aga gtg aat ctg tcc Gly Ile Leu Ser Asn Thr His Arg Gln Ala Ala Arg Val Asn Leu Ser 147 152 157 162	1255
ttc gat ttt cca ttt tat ggc cac ttc cta cgt gaa atc act gtg gca Phe Asp Phe Pro Phe Tyr Gly His Phe Leu Arg Glu Ile Thr Val Ala 163 168 173 178	1303
acc ggg ggt ttc ata tac act gga gaa gtc gta cat cga atg cta aca Thr Gly Gly Phe Ile Tyr Thr Gly Glu Val Val His Arg Met Leu Thr 179 184 189 194	1351
gcc aca cag tac ata gca cct tta atg gca aat ttc gat ccc agt gta	1399

Ala Thr Gln Tyr Ile	Ala Pro Leu Met Ala Asn Phe Asp Pro Ser Val	
195	200	205 210
tcc aga aat tca act gtc aga tat ttt gat aat ggc aca gca ctt gtg		1447
Ser Arg Asn Ser Thr Val Arg Tyr Phe Asp Asn Gly Thr Ala Leu Val		
211	216	221 226
gtc cag tgg gac cat gta cat ctc cag gat aat tat aac ctg gga agc		1495
Val Gln Trp Asp His Val His Leu Gln Asp Asn Tyr Asn Leu Gly Ser		
227	232	237 242
ttc aca ttc cag gca acc ctg ctc atg gat gga cga atc atc ttt gga		1543
Phe Thr Phe Gln Ala Thr Leu Leu Met Asp Gly Arg Ile Ile Phe Gly		
243	248	253 258
tac aaa gaa att cct gtc ttg gtc aca cag ata agt tca acc aat cat		1591
Tyr Lys Glu Ile Pro Val Leu Val Thr Gln Ile Ser Ser Thr Asn His		
259	264	269 274
cca gtg aaa gtc gga ctg tcc gat gca ttt gtc gtt gtc cac agg atc		1639
Pro Val Lys Val Gly Leu Ser Asp Ala Phe Val Val Val His Arg Ile		
275	280	285 290
caa caa att ccc aat gtt cga aga aga aca att tat gaa tac cac cga		1687
Gln Gln Ile Pro Asn Val Arg Arg Arg Thr Ile Tyr Glu Tyr His Arg		
291	296	301 306
gta gag cta caa atg tca aaa att acc aac att tcg gct gtg gag atg		1735
Val Glu Leu Gln Met Ser Lys Ile Thr Asn Ile Ser Ala Val Glu Met		
307	312	317 322
acc cca tta ccc aca tgc ctc cag ttt aac aga tgt ggc ccc tgt gta		1783
Thr Pro Leu Pro Thr Cys Leu Gln Phe Asn Arg Cys Gly Pro Cys Val		
323	328	333 338
tct tct cag att ggc ttc aac tgc agt tgg tgt agt aaa ctt caa aga		1831
Ser Ser Gln Ile Gly Phe Asn Cys Ser Trp Cys Ser Lys Leu Gln Arg		
339	344	349 354
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Cys Ser Ser Gly Phe Asp Arg His Arg Gln Asp Trp Val Asp Ser Gly		
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tgc cct gaa gag tca aaa gag aag atg tgt gag aat aca gaa cca gtg		1927
Cys Pro Glu Glu Ser Lys Glu Lys Met Cys Glu Asn Thr Glu Pro Val		
371	376	381 386
gaa act tct tct cga acc acc aca acc ata gga gcg aca acc acc cag		1975
Glu Thr Ser Ser Arg Thr Thr Thr Thr Ile Gly Ala Thr Thr Thr Gln		
387	392	397 402
ttc agg gtc cta act acc acc aga aga gca gtg act tct cag ttt ccc		2023
Phe Arg Val Leu Thr Thr Thr Arg Arg Ala Val Thr Ser Gln Phe Pro		
403	408	413 418
acc agc ctc cct aca gaa gat gat acc aag ata gca cta cat cta aaa		2071
Thr Ser Leu Pro Thr Glu Asp Asp Thr Lys Ile Ala Leu His Leu Lys		

419	424	429	434	
gat aat gga gct tct aca gat gac agt gca gct gag aag aaa ggg gga				2119
Asp Asn Gly Ala Ser Thr Asp Asp Ser Ala Ala Glu Lys Lys Gly Gly				
435	440	445	450	
acc ctc cac gct ggc ctc atc gtt gga atc ctc atc ctg gtc ctc att				2167
Thr Leu His Ala Gly Leu Ile Val Gly Ile Leu Ile Leu Val Leu Ile				
451	456	461	466	
gta gcc aca gcc att ctt gtg aca gtc tat atg tat cac cac cat gta				2215
Val Ala Thr Ala Ile Leu Val Thr Val Tyr Met Tyr His His His Val				
467	472	477	482	
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Leu Arg Pro Leu *				
483				

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agcaccggcg aaggactggc ggggtgggta gggaggtggc ggcggcggc	atg gcg Met Ala 1	775
agg ttc ccg aag gcc gac ctg gcc gct gca gga gtt atg tta ctt tgc Arg Phe Pro Lys Ala Asp Leu Ala Ala Ala Gly Val Met Leu Leu Cys 3 8 13 18		823
cac ttc ttc acg gac cag ttt cag ttc gcc gat ggg aaa ccc gga gac His Phe Phe Thr Asp Gln Phe Gln Phe Ala Asp Gly Lys Pro Gly Asp 19 24 29 34		871
caa atc ctt gat tgg cag tat gga gtt act cag gcg ttc cct cac aca Gln Ile Leu Asp Trp Gln Tyr Gly Val Thr Gln Ala Phe Pro His Thr 35 40 45 50		919
gag gag gag gtg gaa gtt gat tca cac gcg tac agc cac agg tgg aaa Glu Glu Glu Val Glu Val Asp Ser His Ala Tyr Ser His Arg Trp Lys 51 56 61 66		967
aga aac ttg gac ttt ctg aag gcg gta gac acg aac cga gca agc gtc Arg Asn Leu Asp Phe Leu Lys Ala Val Asp Thr Asn Arg Ala Ser Val 67 72 77 82		1015
ggc caa gac tct cct gag ccc aga agc ttc aca gac ctg ctg ctg gat Gly Gln Asp Ser Pro Glu Pro Arg Ser Phe Thr Asp Leu Leu Leu Asp 83 88 93 98		1063
gat ggg cag gac aat aac act cag atc gag gag gat aca gac cac aat Asp Gly Gln Asp Asn Asn Thr Gln Ile Glu Glu Asp Thr Asp His Asn 99 104 109 114		1111
tac tat ata tct cga ata tat ggt cca tct gat tct gcc agc cgg gat Tyr Tyr Ile Ser Arg Ile Tyr Gly Pro Ser Asp Ser Ala Ser Arg Asp 115 120 125 130		1159
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acc ggg ggt ttc ata tac act gga gaa gtc gta cat cga atg cta aca Thr Gly Gly Phe Ile Tyr Thr Gly Glu Val Val His Arg Met Leu Thr 179 184 189 194		1351
gcc aca cag tac ata gca cct tta atg gca aat ttc gat ccc agt gta Ala Thr Gln Tyr Ile Ala Pro Leu Met Ala Asn Phe Asp Pro Ser Val 195 200 205 210		1399
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Ser Arg Asn Ser Thr Val Arg Tyr Phe Asp Asn Gly Thr Ala Leu Val	
211 216 221 226	
gtc cag tgg gac cat gta cat ctc cag gat aat tat aac ctg gga agc	1495
Val Gln Trp Asp His Val His Leu Gln Asp Asn Tyr Asn Leu Gly Ser	
227 232 237 242	
ttc aca ttc cag gca acc ctg ctc atg gat gga cga atc atc ttt gga	1543
Phe Thr Phe Gln Ala Thr Leu Leu Met Asp Gly Arg Ile Ile Phe Gly	
243 248 253 258	
tac aaa gaa att cct gtc ttg gtc aca cag ata agt tca acc aat cat	1591
Tyr Lys Glu Ile Pro Val Leu Val Thr Gln Ile Ser Ser Thr Asn His	
259 264 269 274	
cca gtg aaa gtc gga ctg tcc gat gca ttt gtc gtt gtc cac agg atc	1639
Pro Val Lys Val Gly Leu Ser Asp Ala Phe Val Val Val His Arg Ile	
275 280 285 290	
caa caa att ccc aat gtt cga aga aga aca att tat gaa tac cac cga	1687
Gln Gln Ile Pro Asn Val Arg Arg Arg Thr Ile Tyr Glu Tyr His Arg	
291 296 301 306	
gta gag cta caa atg tca aaa att acc aac att tcg gct gtg gag atg	1735
Val Glu Leu Gln Met Ser Lys Ile Thr Asn Ile Ser Ala Val Glu Met	
307 312 317 322	
acc cca tta ccc aca tgc ctc cag ttt aac aga tgt ggc ccc tgt gta	1783
Thr Pro Leu Pro Thr Cys Leu Gln Phe Asn Arg Cys Gly Pro Cys Val	
323 328 333 338	
tct tct cag att ggc ttc aac tgc agt tgg tgt agt aaa ott caa aga	1831
Ser Ser Gln Ile Gly Phe Asn Cys Ser Trp Cys Ser Lys Leu Gln Arg	
339 344 349 354	
tgt tcc agt gga ttt gat cgt cat cgg cag gac tgg gtg gac agt gga	1879
Cys Ser Ser Gly Phe Asp Arg His Arg Gln Asp Trp Val Asp Ser Gly	
355 360 365 370	
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Cys Pro Glu Glu Ser Lys Glu Lys Met Cys Glu Asn Thr Glu Pro Val	
371 376 381 386	
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Glu Thr Ser Ser Arg Thr Thr Thr Thr Ile Gly Ala Thr Thr Thr Gln	
387 392 397 402	
ttc agg gtc cta act acc acc aga aga gca gtg act tct cag ttt ccc	2023
Phe Arg Val Leu Thr Thr Thr Arg Arg Ala Val Thr Ser Gln Phe Pro	
403 408 413 418	
acc agc ctc cct aca gaa gat gat acc aag ata gca cta cat cta aaa	2071
Thr Ser Leu Pro Thr Glu Asp Asp Thr Lys Ile Ala Leu His Leu Lys	
419 424 429 434	
gat aat gga gct tct aca gat gac agt gca gct gag aag aaa ggg gga	2119
Asp Asn Gly Ala Ser Thr Asp Asp Ser Ala Ala Glu Lys Lys Gly Gly	

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Thr Leu His Ala Gly Leu Ile Ile Gly Ile Leu Ile Leu Val Leu Ile				
451	456	461	466	
gta gcc aca gcc att ctt gtg aca gtc tat atg tat cac cac cca aca				2215
Val Ala Thr Ala Ile Leu Val Thr Val Tyr Met Tyr His His Pro Thr				
467	472	477	482	
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Ser Ala Ala Ser Ile Phe Phe Ile Glu Arg Arg Pro Ser Arg Trp Pro				
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gcg atg aag ttt aga aga ggc tct gga cat cct gcc tat gct gaa gtt				2311
Ala Met Lys Phe Arg Arg Gly Ser Gly His Pro Ala Tyr Ala Glu Val				
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gaa cca gtt gga gag aaa gaa ggc ttt att gta tca gag cag tgc taa				2359
Glu Pro Val Gly Glu Lys Glu Gly Phe Ile Val Ser Glu Gln Cys *				
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tataccttta agacaaacaa acaaacacac acacaaacaa gctctaagct gctgtagcct				2479
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	Met Trp Gln Pro Ala Thr Glu Arg Leu Gln His Phe Gln					
	1 5 10					
acc atg ctg aag tct aaa ttg aat gtc tta aca ctg aaa aag gaa cct	337					
Thr Met Leu Lys Ser Lys Leu Asn Val Leu Thr Leu Lys Lys Glu Pro						
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ctc cca gcg gtc atc ttc cat gag ccg gag gcc att gag ctg tgc acg	385					
Leu Pro Ala Val Ile Phe His Glu Pro Glu Ala Ile Glu Leu Cys Thr						
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acc aca ccg ctg atg aag aca agg act cac agt ggc tgc aag gtt acc	433					
Thr Thr Pro Leu Met Lys Thr Arg Thr His Ser Gly Cys Lys Val Thr						
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Tyr Leu Gly Lys Val Ser Thr Thr Gly Met Gln Phe Leu Ser Gly Cys						
62 67 72 77						
aca gaa aag cca gtc att gag ctc tgg aag aag cac acg cta gcc cga	529					
Thr Glu Lys Pro Val Ile Glu Leu Trp Lys Lys His Thr Leu Ala Arg						
78 83 88 93						
gag gat gtc ttt ccg gcc aat gcc ctc ctg gaa atc cgg cca ttc caa	577					
Glu Asp Val Phe Pro Ala Asn Ala Leu Leu Glu Ile Arg Pro Phe Gln						
94 99 104 109						
gtt tgg ctc cat cat ctc gac cac aaa ggg gag gcc aca gtg cac atg	625					
Val Trp Leu His His Leu Asp His Lys Gly Glu Ala Thr Val His Met						
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gat acc ttc cag gtg gcc cgc atc gcc tac tgc acc gcc gac cac aac	673					
Asp Thr Phe Gln Val Ala Arg Ile Ala Tyr Cys Thr Ala Asp His Asn						
126 131 136 141						
gtg agc ccc aac atc ttc gcc tgg gtc tac agg gag atc aat gat gac	721					
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ctg tcc tac cag atg gac tgc cac gcc gtg gag tgc gag agc aag ctc	769					
Leu Ser Tyr Gln Met Asp Cys His Ala Val Glu Cys Glu Ser Lys Leu						
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Glu Ala Lys Lys Leu Ala His Ala Met Met Glu Ala Phe Arg Lys Thr						
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Ala Asn Val Val Glu Asn Ile Glu Arg Leu Gln Leu Val Ser Thr Leu	
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Gly Leu Gly Glu Glu Asp Val Cys Gln Glu His Gly Glu Lys Ile Tyr	
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Phe Phe Cys Glu Asp Asp Glu Met Gln Leu Cys Val Val Cys Arg Glu	
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Ala Gly Glu His Ala Thr His Thr Met Arg Phe Leu Glu Asp Ala Ala	
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Ala Pro Tyr Arg Glu Gln Ile His Lys Cys Leu Lys Cys Leu Arg Lys	
140 145 150 155	
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Gln Val Leu Leu Thr Gln Val Ser Thr Lys Arg Gln Gln Val Ile Ser	
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Glu Phe Ala His Leu Arg Lys Phe Leu Glu Glu Gln Gln Ser Ile Leu	
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Leu Ala Gln Leu Glu Ser Gln Asp Gly Asp Ile Leu Arg Gln Arg Asp	
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Glu Phe Asp Leu Leu Val Ala Gly Glu Ile Cys Arg Phe Ser Ala Leu	
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Ile Glu Glu Leu Glu Glu Lys Asn Glu Arg Pro Ala Arg Glu Leu Leu	
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Thr Asp Ile Arg Ser Thr Leu Ile Arg Cys Glu Thr Arg Lys Cys Arg	
252 257 262 267	
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Lys Pro Val Ala Val Ser Pro Glu Leu Gly Gln Arg Ile Arg Asp Phe	
268 273 278 283	
ccc cag cag gcc ctc ccg ctg cag agg gag atg aag atg ttt ctg gaa	1336
Pro Gln Gln Ala Leu Pro Leu Gln Arg Glu Met Lys Met Phe Leu Glu	
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Pro Gln Thr Ser His Pro Lys Leu Leu Leu Ser Glu Asp His Gln Arg	
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Phe Asp Arg Ala Thr Cys Val Leu Ala His Thr Gly Ile Thr Gly Gly	
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Arg His Thr Trp Val Val Ser Ile Asp Leu Ala His Gly Gly Ser Cys	
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Thr Val Gly Val Val Ser Glu Asp Val Gln Arg Lys Gly Glu Leu Arg	
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Leu Arg Pro Glu Glu Gly Val Trp Ala Val Arg Leu Ala Trp Gly Phe	
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Val Ser Ala Leu Gly Ser Phe Pro His Thr Ala Asp Pro Glu Gly Ala	
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Ala Pro Ala Gly Glu Gly Val Ser *	
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 Met Gly Asp Lys Asp Asp Asp Asp Asp Asp Ala Asp Glu Lys Met
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 Gln Ser Ser Gly Ile Pro Asn Gly Gly His Ile Arg Gln Glu Ser Gln
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 Glu Gln Ser Glu Val Asp His Gly Asp Phe Glu Met Val Ser Glu Ser
 33 38 43 48

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49 54 59 64	
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65 70 75 80	
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81 86 91 96	
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97 102 107 112	
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113 118 123 128	
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129 134 139 144	
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161 166 171 176	
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177 182 187 192	
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193 198 203 208	
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209 214 219 224	
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225 230 235 240	
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241 246 251 256	
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cca tac atg cag gtc att cta atg ctc act aca gat ctg gat gga gaa	984
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Asp Glu Lys Asp Lys Gly Ala Leu Asp Asn Leu Leu Ser Gln Leu Ile	
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Ala Glu Leu Gly Met Asp Lys Lys Asp Val Ser Lys Lys Asn Glu Arg	
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Ser Ala Leu Asn Glu Val His Leu Val Val Met Arg Leu Leu Ser Val	
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Phe Met Ser Arg Thr Lys Ser Gly Ser Lys Ser Ser Ile Cys Glu Ser	
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Ser Ser Leu Ile Ser Ser Ala Thr Ala Ala Ala Leu Leu Ser Ser Gly	
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Ala Val Asp Tyr Cys Leu His Val Leu Lys Ser Leu Leu Glu Tyr Trp	
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Lys Ser Gln Gln Asn Asp Glu Glu Pro Val Ala Thr Ser Gln Leu Leu	
385 390 395 400	
aaa cca cat act acc tcc tcc cca cct gac atg agc cca ttc ttt ctc	1368
Lys Pro His Thr Thr Ser Ser Pro Pro Asp Met Ser Pro Phe Phe Leu	
401 406 411 416	
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Arg Gln Tyr Val Lys Gly His Ala Ala Asp Val Phe Glu Ala Tyr Thr	
417 422 427 432	
cag ctt cta aca gaa atg gta ctg agg ctt cct tac caa atc aaa aag	1464
Gln Leu Leu Thr Glu Met Val Leu Arg Leu Pro Tyr Gln Ile Lys Lys	
433 438 443 448	
att act gac acc aat tct cga atc cca cct cct gtc ttt gac cac tcg	1512
Ile Thr Asp Thr Asn Ser Arg Ile Pro Pro Pro Val Phe Asp His Ser	
449 454 459 464	
tgg ttt tac ttt ctc tcc gag tac ctc atg atc cag cag act cca ttt	1560
Trp Phe Tyr Phe Leu Ser Glu Tyr Leu Met Ile Gln Gln Thr Pro Phe	
465 470 475 480	
gtg cgc cgt caa gtc cgc aaa ctt ctg ctc ttc atc tgt gga tcc aaa	1608
Val Arg Arg Gln Val Arg Lys Leu Leu Leu Phe Ile Cys Gly Ser Lys	
481 486 491 496	
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Glu Lys Tyr Arg Gln Leu Arg Asp Leu His Thr Leu Asp Ser His Val	
497 502 507 512	
cgt ggg atc aag aag ctg cta gaa gag cag ggg ata ttc ctc cgg gca	1704
Arg Gly Ile Lys Lys Leu Leu Glu Glu Gln Gly Ile Phe Leu Arg Ala	
513 518 523 528	
agt gtg gtt aca gcc agc tca ggc tcc gcc ttg caa tat gac aca ctc	1752
Ser Val Val Thr Ala Ser Ser Gly Ser Ala Leu Gln Tyr Asp Thr Leu	
529 534 539 544	
atc agc ctg atg gag cac ctg aaa gcc tgt gca gag att gcc gcc cag	1800
Ile Ser Leu Met Glu His Leu Lys Ala Cys Ala Gly Ile Ala Ala Gln	
545 550 555 560	
cga acc atc aac tgg cag aaa ttc tgc atc aaa gat gac tcc gtc ctg	1848
Arg Thr Ile Asn Trp Gln Lys Phe Cys Ile Lys Asp Asp Ser Val Leu	
561 566 571 576	
tac ttc ctc ctc caa gtc agt ttc ctt gtg gat gag ggc gtg tcc cca	1896
Tyr Phe Leu Leu Gln Val Ser Phe Leu Val Asp Glu Gly Val Ser Pro	
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gtg ctg ctg caa ctg ctc tcc tgt gct ctg tgc ggc agc aag gtg ctc	1944
Val Leu Leu Gln Leu Leu Ser Cys Ala Leu Cys Gly Ser Lys Val Leu	
593 598 603 608	
gct gca ctg gca gcc tct tcg gga tcc tcc agt gct tct tcc tcc tca	1992
Ala Ala Leu Ala Ala Ser Ser Gly Ser Ser Ser Ala Ser Ser Ser	
609 614 619 624	
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Ala Pro Val Ala Ala Ser Ser Gly Gln Ala Thr Thr Gln Ser Lys Ser	
625 630 635 640	
tcc act aaa aag agc aag aaa gaa gaa aaa aaa aag gag aaa gat ggt	2088
Ser Thr Lys Lys Ser Lys Lys Glu Glu Lys Lys Lys Glu Lys Asp Gly	
641 646 651 656	
gag acc tct ggc agc cag gag gac cag ctg tgc aca gct ctg gtg aac	2136
Glu Thr Ser Gly Ser Gln Glu Asp Gln Leu Cys Thr Ala Leu Val Asn	
657 662 667 672	
cag ctg aac aaa ttt gcc gat aag gaa acc ctg atc cag ttc ctg cgt	2184
Gln Leu Asn Lys Phe Ala Asp Lys Glu Thr Leu Ile Gln Phe Leu Arg	
673 678 683 688	
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Cys Phe Leu Leu Glu Ser Asn Ser Ser Ser Val Arg Trp Gln Ala His	
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Cys Leu Thr Leu His Ile Tyr Arg Asn Ser Ser Lys Ser Gln Gln Glu	
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ctc ctg cta gat ctg atg tgg tcc atc tgg cca gaa ctc cca gcc tat	2328
Leu Leu Leu Asp Leu Met Trp Ser Ile Trp Pro Glu Leu Pro Ala Tyr	

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Gly Arg Lys Ala Ala Gln Phe Val Asp Leu Leu Gly Tyr Phe Ser Leu				
737	742	747	752	
aaa act cca caa aca gag aag aag ttg aag gag tat tca cag aag gct				2424
Lys Thr Pro Gln Thr Glu Lys Lys Leu Lys Glu Tyr Ser Gln Lys Ala				
753	758	763	768	
gtg gag att ctg cgg act caa aac cat att ctt acc aac cac ccc aac				2472
Val Glu Ile Leu Arg Thr Gln Asn His Ile Leu Thr Asn His Pro Asn				
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tcg aac att tat aac act ttg tct ggc tta gtg gag ttt gat ggc tat				2520
Ser Asn Ile Tyr Asn Thr Leu Ser Gly Leu Val Glu Phe Asp Gly Tyr				
785	790	795	800	
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Tyr Leu Glu Ser Asp Pro Cys Leu Val Cys Asn Asn Pro Glu Val Pro				
801	806	811	816	
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Phe Cys Tyr Ile Lys Leu Ser Ser Ile Lys Val Asp Thr Arg Tyr Thr				
817	822	827	832	
acc acc cag cag gtt gtg aag ctc att ggc agt cac acc atc agc aaa				2664
Thr Thr Gln Gln Val Val Lys Leu Ile Gly Ser His Thr Ile Ser Lys				
833	838	843	848	
gtg aca gtg aaa atc ggg gat ctg aaa cgg acc aag atg gtg cgg acc				2712
Val Thr Val Lys Ile Gly Asp Leu Lys Arg Thr Lys Met Val Arg Thr				
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Ile Asn Leu Tyr Tyr Asn Asn Arg Thr Val Gln Ala Ile Val Glu Leu				
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Lys Asn Lys Pro Ala Arg Trp His Lys Ala Lys Lys Val Gln Leu Thr				
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cct gga cag aca gag gtg aag att gac ctg ccg ttg ccc att gtg gcc				2856
Pro Gly Gln Thr Glu Val Lys Ile Asp Leu Pro Leu Pro Ile Val Ala				
897	902	907	912	
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Ser Asn Leu Met Ile Glu Phe Ala Asp Phe Tyr Glu Asn Tyr Gln Ala				
913	918	923	928	
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Ser Thr Glu Thr Leu Gln Cys Pro Arg Cys Ser Ala Ser Val Pro Ala				
929	934	939	944	
aac cca gga gtc tgt ggc aac tgt gga gag aat gtg tac cag tgt cac				3000
Asn Pro Gly Val Cys Gly Asn Cys Gly Glu Asn Val Tyr Gln Cys His				
945	950	955	960	

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Lys Cys Arg Ser Ile Asn Tyr Asp Glu Lys Asp Pro Phe Leu Cys Asn	
961 966 971 976	
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Ala Cys Gly Phe Cys Lys Tyr Ala Arg Phe Asp Phe Met Leu Tyr Ala	
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993 998 1003 1008	
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Pro Ala Leu Arg His Ile Leu Val Ser Gln Gly Leu Ile Arg Glu Leu	
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Glu Phe Ile Glu Ser Leu Asp Ser Thr Thr Asp Glu Glu Glu Asp Glu				
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Val Lys Val Asn Arg Gln Gln Leu Val Lys Leu Glu Met Asn Thr Leu				
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Asn Val Met Leu Gly Thr Leu Asn Leu Ala Leu Val Ala Glu Gln Glu				
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Ser Lys Asp Ser Gly Gly Ala Ala Val Ala Glu Gln Val Leu Ser Ile				
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Gln Gly Leu Leu Arg Ile Ile Pro Tyr Leu Ser Phe Gly Glu Val Glu	
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Tyr Met Lys Lys His Ile Pro Ser Ala Lys Asn Leu Asp Ala Asp Ile	
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Lys Lys Gly Glu Thr Leu Arg Lys Gln Thr Glu Glu Lys Glu Lys Lys		
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Glu Ile Pro Val Glu Gln Lys Glu Gly Ala Phe Ser Asn Phe Pro Ile		
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Ser Glu Glu Thr Ile Lys Leu Leu Lys Gly Arg Gly Val Thr Phe Leu		

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Phe Pro Ile Gln Ala Lys Thr Phe His His Val Tyr Ser Gly Lys Asp				
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Leu Ile Ala Gln Ala Arg Thr Gly Thr Gly Lys Thr Phe Ser Phe Ala				
226	231	236	241	
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Ile Pro Leu Ile Glu Lys Leu His Gly Glu Leu Gln Asp Arg Lys Arg				
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Gly Arg Ala Pro Gln Val Leu Val Leu Ala Pro Thr Arg Glu Leu Ala				
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Asn Gln Val Ser Lys Asp Phe Ser Asp Ile Thr Lys Lys Leu Ser Val				
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Ala Cys Phe Tyr Gly Gly Thr Pro Tyr Gly Gly Gln Phe Glu Arg Met				
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91 96 101 106

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Asn Ile Thr Glu Val Gly Ala Pro Thr Glu Glu Glu Glu Glu Ser Glu
107 112 117 122

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Ser Glu Asp Ser Glu Asp Ser Gly Gly Glu Glu Glu Asp Ala Glu Glu
123 128 133 138

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Glu Glu Tyr Ile Ala Val Gly Asp Phe Thr Ala Gln Gln Val Gly Asp		
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Leu Thr Phe Lys Lys Gly Glu Ile Leu Leu Val Ile Glu Lys Lys Pro		
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Asp Gly Trp Trp Ile Ala Lys Asp Ala Lys Gly Asn Glu Gly Leu Val		
187	192 197 202	
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Pro Arg Thr Tyr Leu Glu Pro Tyr Ser Glu Glu Glu Glu Gly Gln Glu		
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Ser Ser Glu Glu Gly Ser Glu Glu Asp Val Glu Ala Val Asp Glu Thr		
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Ala Asp Gly Ala Glu Val Lys Gln Arg Thr Asp Pro His Trp Ser Ala		
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Val Gln Lys Ala Ile Ser Glu Ala Gly Ile Phe Cys Leu Val Asn His		
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Val Ser Phe Cys Tyr Leu Ile Val Leu Met Arg Asn Arg Met Glu Thr		
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Pro Ser Arg Ile Ser Leu Ile Leu Thr Leu Trp Ser Cys Lys Met Ile				
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Val Thr Arg Ile Leu Pro Cys Leu Leu Asp Gly Asp Cys Phe Ile Arg				
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Lys Thr Tyr Glu Leu Phe Leu Asn Gly Gly Thr Pro Tyr Glu Lys Gly				
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Ile Glu Val Asp Pro Ser Ile Ser Arg Arg Ala His Gly Ser Val Phe				
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Tyr Gln Ile Met Thr Met Arg Arg Gln Pro Gln Leu Leu Val Lys Leu				
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Ser Tyr Gln Pro Ile Val Asp Tyr Ile Asp Ala Gln Phe Glu Ala Tyr				
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Gly Asp Ala Asn Cys Ile Gln Pro Tyr Leu Ala Arg Arg Pro Lys Leu	
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Gln Leu Ser Val Tyr Thr Thr Thr Arg Ser His Leu Gly Ala Glu Asn	

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Phe Glu Arg Thr Val Asn Val Ser Val Pro Lys Lys Thr Arg Asn Asn				
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Trp His Asp Gly Lys Gln Val His Leu Val Ser Pro Leu Thr Thr Tyr				
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Ser Leu Leu Tyr Val Gln Gly Asn Glu Arg Ala His Gly Gln Asp Leu	
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Cys His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe	
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Trp Leu Ala Thr Ile Glu Arg Ser Glu Met Phe Lys Lys Pro Thr Pro	
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Gln Glu Leu Tyr Ser Ser Gly Leu Leu Val Thr Leu Ile Ala Asp Leu	
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Gln Leu Ile Asp Phe Glu Gly Lys Lys Asp Val Thr Gln Ile Phe Asn	
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Asn Ile Leu Arg Arg Gln Ile Gly Thr Arg Ser Pro Thr Val Glu Tyr	
103 108 113 118	
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Ile Ser Ala His Pro His Ile Leu Phe Met Leu Leu Lys Gly Tyr Glu	
119 124 129 134	
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Ala Pro Gln Ile Ala Leu Arg Cys Gly Ile Met Leu Arg Glu Cys Ile	
135 140 145 150	
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Arg His Glu Pro Leu Ala Lys Ile Ile Leu Phe Ser Asn Gln Phe Arg	
151 156 161 166	
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Asp Phe Phe Lys Tyr Val Glu Leu Ser Thr Phe Asp Ile Ala Ser Asp	
167 172 177 182	
gcc ttt gct act ttc aag gat tta cta acc aga cat aaa gtg ttg gta	810
Ala Phe Ala Thr Phe Lys Asp Leu Leu Thr Arg His Lys Val Leu Val	
183 188 193 198	
gca gac ttc tta gaa caa aat tac gac act att ttt gaa gac tat gag	858
Ala Asp Phe Leu Glu Gln Asn Tyr Asp Thr Ile Phe Glu Asp Tyr Glu	
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Lys Leu Leu Gln Ser Glu Asn Tyr Val Thr Lys Arg Gln Ser Leu Lys	
215 220 225 230	
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Leu Leu Gly Glu Leu Ile Leu Asp Arg His Asn Phe Ala Ile Met Thr	
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Lys Tyr Ile Ser Lys Pro Glu Asn Leu Lys Leu Met Met Asn Leu Leu	
247 252 257 262	
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Arg Asp Lys Ser Pro Asn Ile Gln Phe Glu Ala Phe His Val Phe Lys	
263 268 273 278	
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Val Phe Val Ala Ser Pro His Lys Thr Gln Pro Ile Val Glu Ile Leu	
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Leu Lys Asn Gln Pro Lys Leu Ile Glu Phe Leu Ser Ser Phe Gln Lys	
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Glu Arg Thr Asp Asp Glu Gln Phe Ala Asp Glu Lys Asn Tyr Leu Ile	
311 316 321 326	
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Lys Gln Ile Arg Asp Leu Lys Lys Thr Ala Pro *	
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Met Tyr Ile Ser Pro Pro Lys Asp Trp Trp Tyr Ala Gly Asp Pro Ser	
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Leu Pro Ile Arg Thr Pro Ala Met Ile Gly Cys Ser Phe Val Val Asn	
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Arg Lys Phe Phe Gly Glu Ile Gly Leu Leu Asp Pro Gly Met Asp Val	
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Tyr Gly Gly Glu Asn Ile Glu Leu Gly Ile Lys Val Trp Leu Cys Gly	
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Gly Ser Met Glu Val Leu Pro Cys Ser Arg Val Ala His Ile Glu Arg	
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Lys Lys Lys Pro Tyr Asn Ser Asn Ile Gly Phe Tyr Thr Lys Arg Asn	
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Ala	Leu	Arg	Val	Ala	Glu	Val	Trp	Met	Asp	Asp	Tyr	Lys	Ser	His	Val
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Tyr	Ile	Ala	Trp	Asn	Leu	Pro	Leu	Glu	Asn	Pro	Gly	Ile	Asp	Ile	Gly	
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Phe	Gln	Trp	Tyr	Leu	Asp	His	Val	Tyr	Pro	Glu	Met	Arg	Arg	Tyr	Asn	
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Asp	Lys	Val	Lys	Ser	Ser	Leu	Tyr	Lys	Arg	Trp	Asn	Phe	Ile	Gln	Asn	
241					246					251					256	

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257					262					267					272	

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289					294											

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Gln Arg Lys His Ser Ala Glu Lys Glu Ala Leu Leu Glu Glu Thr Asn	
33 38 43 48	
agt ttt ctg aaa gcg att gaa gaa gcc aat aaa aag atg caa gca gca	249
Ser Phe Leu Lys Ala Ile Glu Glu Ala Asn Lys Lys Met Gln Ala Ala	
49 54 59 64	
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Glu Ile Ser Leu Glu Glu Lys Asp Gln Arg Ile Gly Glu Leu Asp Arg	
65 70 75 80	
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Leu Ile Glu Arg Met Glu Lys Glu Arg His Gln Leu Gln Leu Gln Leu	
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Leu Glu His Glu Thr Glu Met Ser Gly Glu Leu Thr Asp Ser Asp Lys	
97 102 107 112	
gaa agg tat cag cag ttg gag gag gca tca gcc agc ctc cgt gag cgg	441
Glu Arg Tyr Gln Gln Leu Glu Glu Ala Ser Ala Ser Leu Arg Glu Arg	
113 118 123 128	
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Ile Arg His Leu Asp Asp Met Val His Cys Gln Gln Lys Lys Val Lys	
129 134 139 144	
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Gln Met Val Glu Glu Ile Glu Ser Leu Lys Lys Lys Leu Gln Gln Lys	
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Gln Leu Leu Ile Leu Gln Leu Leu Glu Lys Ile Ser Phe Leu Glu Gly	
161 166 171 176	
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Glu Asn Asn Glu Leu Gln Ser Arg Leu Asp Tyr Leu Thr Glu Thr Gln	
177 182 187 192	
gcc aag acc gaa gtg gaa acc aga gag ata gga gtg ggc tgt gat ctt	681
Ala Lys Thr Glu Val Glu Thr Arg Glu Ile Gly Val Gly Cys Asp Leu	
193 198 203 208	
cta ccc agc caa aca ggc agg act cgt gaa att gtg atg cct tct agg	729
Leu Pro Ser Gln Thr Gly Arg Thr Arg Glu Ile Val Met Pro Ser Arg	
209 214 219 224	

aac tac acc cca tac aca aga gtc ctg gag tta acc atg aag aaa act 777
 Asn Tyr Thr Pro Tyr Thr Arg Val Leu Glu Leu Thr Met Lys Lys Thr
 225 230 235 240

ctg act tag gcactca gaggcataca ctttttacag atggacaaaa gctctggaac 833
 Leu Thr *
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gacaccagcg cagagtgcag actgaatggg gaaaggagat gcagagaaaa tctggcaaca 300

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Met Ser Ser Lys Gln Ala Thr Ser Pro Phe Ala Cys Ala Ala

1

5

10

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Asp Gly Glu Asp Ala Met Thr Gln Asp Leu Thr Ser Arg Glu Lys Glu

15

20

25

30

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Glu Gly Ser Asp Gln His Val Ala Ser His Leu Pro Leu His Pro Ile

31

36

41

46

atg cac aac aaa cct cac tct gag gag cta cca aca ctt gtc agt acc 551

Met His Asn Lys Pro His Ser Glu Glu Leu Pro Thr Leu Val Ser Thr

47

52

57

62

att caa caa gat gct gac tgg gac agc gtt ctg tca tct cag caa aga 599

Ile Gln Gln Asp Ala Asp Trp Asp Ser Val Leu Ser Ser Gln Gln Arg

63	68	73	78	
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Met Glu Ser Glu Asn Asn Lys Leu Cys Ser Leu Tyr Ser Phe Arg Asn				
79	84	89	94	
acc tct acc tca cca cat aag cct gac gaa ggg agt cgg gac cgt gag				695
Thr Ser Thr Ser Pro His Lys Pro Asp Glu Gly Ser Arg Asp Arg Glu				
95	100	105	110	
ata atg acc agt gtt act ttt gga acc cca gag cgc cgc aaa ggg agt				743
Ile Met Thr Ser Val Thr Phe Gly Thr Pro Glu Arg Arg Lys Gly Ser				
111	116	121	126	
ctt gcc gat gtg gtg gac aca ctg aaa cag aag aag ctt gag gaa atg				791
Leu Ala Asp Val Val Asp Thr Leu Lys Gln Lys Lys Leu Glu Glu Met				
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Thr Arg Thr Glu Gln Glu Asp Ser Ser Cys Met Glu Lys Leu Leu Ser				
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Lys Asp Trp Lys Glu Lys Met Glu Arg Leu Asn Thr Ser Glu Leu Leu				
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Gly Glu Ile Lys Gly Thr Pro Glu Ser Leu Ala Glu Lys Glu Arg Gln				
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ctc tcc acc atg att acc cag ctg atc agt tta cgg gag cag cta ctg				983
Leu Ser Thr Met Ile Thr Gln Leu Ile Ser Leu Arg Glu Gln Leu Leu				
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gca gcg cat gat gaa cag aaa aaa ctg gca gcg tca caa att gag aaa				1031
Ala Ala His Asp Glu Gln Lys Lys Leu Ala Ala Ser Gln Ile Glu Lys				
207	212	217	222	
caa cgg cag caa atg gac ctt gct cgc caa cag caa gaa cag att gcg				1079
Gln Arg Gln Gln Met Asp Leu Ala Arg Gln Gln Gln Glu Gln Ile Ala				
223	228	233	238	
aga caa cag cag caa ctt ctg caa cag cag cac aaa att aat ctc ctg				1127
Arg Gln Gln Gln Gln Leu Leu Gln Gln Gln His Lys Ile Asn Leu Leu				
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Gln Gln Gln Ile Gln Gln Val Gln Gly His Met Pro Pro Leu Met Ile				
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cca att ttt cca cat gac cag cgg act ctg gca gca gct gct gct gcc				1223
Pro Ile Phe Pro His Asp Gln Arg Thr Leu Ala Ala Ala Ala Ala Ala				
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Gln Gln Gly Phe Leu Phe Pro Pro Gly Ile Thr Tyr Lys Pro Gly Asp				
287	292	297	302	

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Asn Tyr Pro Val Gln Phe Ile Pro Ser Thr Met Ala Ala Ala Ala	
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Ser Gly Leu Ser Pro Leu Gln Leu Gln Lys Gly His Val Ser His Pro	
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Gln Ile Asn Gln Arg Leu Lys Gly Leu Ser Asp Arg Phe Gly Arg Asn	
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Val Ser Pro Thr Gly Ile Lys Asn Glu Lys Arg Gly Thr Ser Pro Val	
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Thr Gln Val Lys Asp Glu Ala Ala Ala Gln Pro Leu Asn Leu Ser Ser	
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Leu Asp Ile Leu Ser Ser Leu Asn Ser Pro Ala Leu Phe Gly Asp Gln	
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gat aca gtg atg aaa gcc att cag gag gcg cgg aag atg cga gag cag	1895
Asp Thr Val Met Lys Ala Ile Gln Glu Ala Arg Lys Met Arg Glu Gln	
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Asp Ala Arg Gly Leu Pro Ala Ala Ser His Thr Leu Ser Asp His Met	
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Asn Ala Phe Ile Gly Leu Gly Lys Gly *	
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Met Pro Ala Val Ser Lys Gly Asp Gly
1 5

aaa gag gcg gaa att aag aga atc aac aag gaa ctg gcc aac atc cgc 267
Lys Glu Ala Glu Ile Lys Arg Ile Asn Lys Glu Leu Ala Asn Ile Arg
26 31 36 41

tat	gtg	tgt	aaa	ctg	ctt	ttc	atc	ttc	ctg	ctt	ggc	cat	gac	att	gac	363
Tyr	Val	Cys	Lys	Leu	Leu	Phe	Ile	Phe	Leu	Leu	Gly	His	Asp	Ile	Asp	
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Phe Gly His Met Glu Ala Val Asn Leu Leu Ser Ser Asn Lys Tyr Thr
74 79 84 89

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Glu Lys Gln Ile Gly Tyr Leu Phe Ile Ser Val Leu Val Asn Ser Asn
90 95 100 105

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Ser Glu Leu Ile Arg Leu Ile Asn Asn Ala Ile Lys Asn Asp Leu Ala
106 111 116 121

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 Ser Arg Asn Pro Thr Phe Met Cys Leu Ala Leu His Cys Ile Ala Asn
 122 127 132 137

gtg ggc agc cgg gag atg ggc gag gcc ttt gcc gct gac atc ccc cgc 603
Val Gly Ser Arg Glu Met Gly Glu Ala Phe Ala Ala Asp Ile Pro Arg
138 143 148 153

atc ctg gtg gcc ggg gac agc atg gac agt gtc aag cag agt gcg gcc 651
Ile Leu Val Ala Gly Asp Ser Met Asp Ser Val Lys Gln Ser Ala Ala
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Asn Pro Asp Asp Phe Lys Thr Cys Val Ser Leu Ala Val Ser Arg Leu	
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Ile Ser Leu Ile Ile His Tyr Asp Ser Glu Pro Asn Leu Leu Val Arg	
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Ala Cys Asn Gln Leu Gly Gln Phe Leu Gln His Arg Glu Thr Asn Leu	
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Ser His Glu Ala Val Lys Thr His Ile Asp Thr Val Ile Asn Ala Leu	
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Glu Phe Gly Asn Leu	Ile Ala Gly Asp Pro	Arg Ser Ser Pro Pro Val		
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Glu Thr Lys Ala Thr	Ile Gln Gly Val Leu	Arg Ala Gly Ser Gln Leu		
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ctc agc tca gtg gcc	agc acc gac gtc ctg	gcc acg gtg ctg gag gag	1947	
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586	591	596	601	
atg ccg ccc ttc ccc	gag cgc gag tcg tcc	atc ctg gcc aag ctg aaa	1995	
Met Pro Pro Phe Pro	Glu Arg Glu Ser Ser	Ile Leu Ala Lys Leu Lys		
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Tyr Val Cys Lys Leu Leu Phe Ile Phe Leu Leu Gly His Asp Ile Asp						
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Ile Leu Val Ala Gly Asp Ser Met Asp Ser Val Lys Gln Ser Ala Ala						
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Tyr Phe Val Pro Ala Pro Trp Leu Ser Val Lys Leu Leu Arg Leu Leu	
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Gln Cys Tyr Pro Pro Pro Glu Asp Ala Ala Val Lys Gly Arg Leu Val	
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gaa tgt ctg gag act gtg ctc aac aag gcc cag gag ccc ccc aaa tcc	1035
Glu Cys Leu Glu Thr Val Leu Asn Lys Ala Gln Glu Pro Pro Lys Ser	
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aag aag gtg cag cat tcc aac gcc aag aac gcc atc ctc ttc gag acc	1083
Lys Lys Val Gln His Ser Asn Ala Lys Asn Ala Ile Leu Phe Glu Thr	
298 303 308 313	
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Ile Ser Leu Ile Ile His Tyr Asp Ser Glu Pro Asn Leu Leu Val Arg	
314 319 324 329	
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Ala Cys Asn Gln Leu Gly Gln Phe Leu Gln His Arg Glu Thr Asn Leu	
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Arg Tyr Leu Ala Leu Glu Ser Met Cys Thr Leu Ala Ser Ser Glu Phe	
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Ser His Glu Ala Val Lys Thr His Ile Asp Thr Val Ile Asn Ala Leu	
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Lys Thr Glu Arg Asp Val Ser Val Arg Gln Arg Ala Ala Asp Leu Leu	
378 383 388 393	
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Tyr Ala Met Cys Asp Arg Ser Asn Ala Lys Gln Ile Val Ser Glu Met	
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Leu Lys Val Ala Ile Leu Ala Glu Lys Tyr Ala Val Asp Tyr Ser Trp	

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Ser Glu Glu Val Trp Tyr Arg Val Leu Gln Ile Val Thr Asn Arg Asp				
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gac gtc cag ggc tat gcc gcc aag acc gtc ttt gag gcg ctc cag gcc				1611
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cct gcc tgt cac gag aac atg gtg aag gtt ggc ggc tac atc ctt ggg				1659
Pro Ala Cys His Glu Asn Met Val Lys Val Gly Gly Tyr Ile Leu Gly				
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Glu Phe Gly Asn Leu Ile Ala Gly Asp Pro Arg Ser Ser Pro Pro Val				
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cag ttc tcc ctg ctc cac tcc aag ttc cat ctg tgc agc gtg gcc acg				1755
Gln Phe Ser Leu Leu His Ser Lys Phe His Leu Cys Ser Val Ala Thr				
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Glu Thr Lys Ala Thr Ile Gln Gly Val Leu Arg Ala Gly Ser Gln Leu				
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Arg Asn Ala Asp Val Glu Leu Gln Gln Arg Ala Val Glu Tyr Leu Thr				
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ctc agc tca gtg gcc agc acc gac gtc ctg gcc acg gtg ctg gag gag				1947
Leu Ser Ser Val Ala Ser Thr Asp Val Leu Ala Thr Val Leu Glu Glu				
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atg ccg ccc ttc ccc gag cgc gag tcg tcc atc ctg gcc aag ctg aaa				1995
Met Pro Pro Phe Pro Glu Arg Glu Ser Ser Ile Leu Ala Lys Leu Lys				
602	607	612	617	
cgc aag aag ggg cca ggg gcc ggc agc gcc ctg gac gat ggc cgg agg				2043
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Asp Pro Ser Ser Asn Asp Ile Asn Gly Gly Met Glu Pro Thr Pro Ser				
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Thr Val Ser Thr Pro Ser Pro Ser Ala Asp Leu Leu Gly Leu Arg Ala				
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Leu Val Asp Val Phe Asp Gly Pro Ala Ala Gln Pro Ser Leu Gly Pro	
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Thr Pro Glu Glu Ala Phe Leu Ser Pro Gly Pro Glu Asp Ile Gly Pro	
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Pro Ile Pro Glu Ala Asp Glu Leu Leu Asn Lys Phe Val Cys Lys Asn	
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Asp Leu Gln Thr Gln Leu Ala Val Gln Thr Lys Arg Val Ala Ala Gln	
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Arg Asp Phe Leu Thr Pro Pro Leu Leu Ser Val Arg Phe Arg Tyr Gly	
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Gly Ala Pro Gln Ala Leu Thr Leu Lys Leu Pro Val Thr Ile Asn Lys	
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Lys Gln Leu Ser Leu Pro Gln Gln Glu Ala Gln Lys Ile Phe Lys Ala	
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Asn His Pro Met Asp Ala Glu Val Thr Lys Ala Lys Leu Leu Gly Phe	
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 890 895 900 905

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 922 927 932 937

acc agc aag gag ccc gtc tcc cgt cac ctg tgt gag ctg ctg gca cag 3003
 Thr Ser Lys Glu Pro Val Ser Arg His Leu Cys Glu Leu Leu Ala Gln
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 Gln Phe *
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atctgaaggt tctcagtcaa attctttgtg atctactgat tgtgggggca tggcaagggt 180

tgcttaaagg agcttggctg gtttgggccc ttgtagctga cagaagggtg ccaggagaaa 240

ggcagcacac tgctcggaga atg aag gcg ctt ctg ttg ctg gtc ttg cct 290
 Met Lys Ala Leu Leu Leu Leu Val Leu Pro

1

5

tgg ctc agt cct gct aac tac att gac aat gtg ggc aac ctg cac ttc Trp Leu Ser Pro Ala Asn Tyr Ile Asp Asn Val Gly Asn Leu His Phe 11 16 21 26	338
ctg tat tca gaa ctc tgt aaa ggt gcc tcc cac tac ggc ctg acc aaa Leu Tyr Ser Glu Leu Cys Lys Gly Ala Ser His Tyr Gly Leu Thr Lys 27 32 37 42	386
gat agg aag agg cgc tca caa gat ggc tgt cca gac ggc tgt gcg agc Asp Arg Lys Arg Arg Ser Gln Asp Gly Cys Pro Asp Gly Cys Ala Ser 43 48 53 58	434
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Pro Cys Gln Val Leu Trp Leu Thr Val Met Arg Glu Gln Lys Phe Arg	
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agc agg aac aat gga cag gcc ccg gat gcc tac aga ccc cga gat gac	1106
Ser Arg Asn Asn Gly Gln Ala Pro Asp Ala Tyr Arg Pro Arg Asp Asp	
267 272 277 282	
agc ttt cat gtg att ctc aac aaa agt agc ccc gag gag cag ctt gga	1154
Ser Phe His Val Ile Leu Asn Lys Ser Ser Pro Glu Glu Gln Leu Gly	
283 288 293 298	
ata aaa ctg gtg cgc aag gtg gat gag cct ggg gtt ttc atc ttc aat	1202
Ile Lys Leu Val Arg Lys Val Asp Glu Pro Gly Val Phe Ile Phe Asn	
299 304 309 314	
gtg ctg gat ggc ggt gtg gca tat cga cat ggt cag ctt gag gag aat	1250
Val Leu Asp Gly Gly Val Ala Tyr Arg His Gly Gln Leu Glu Glu Asn	
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Asp Arg Val Leu Ala Ile Asn Gly His Asp Leu Arg Tyr Gly Ser Pro	
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Glu Ser Ala Ala His Leu Ile Gln Ala Ser Glu Arg Arg Val His Leu	
347 352 357 362	
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Val Val Ser Arg Gln Val Arg Gln Arg Ser Pro Asp Ile Phe Gln Glu	
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gcc ggc tgg aac agc aat ggc agc tgg tcc cca ggg cca ggg gag agg	1442
Ala Gly Trp Asn Ser Asn Gly Ser Trp Ser Pro Gly Pro Gly Glu Arg	
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Ser Asn Thr Pro Lys Pro Leu His Pro Thr Ile Thr Cys His Glu Lys	
395 400 405 410	
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Val Val Asn Ile Gln Lys Asp Pro Gly Glu Ser Leu Gly Met Thr Val	
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Ser Val Glu Pro Gly Gly Val Ile Ser Arg Asp Gly Arg Ile Lys Thr	
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Arg Ser Glu Ala Val	Ala Leu Leu Lys Arg	Thr Ser Ser Ser Ile Val		
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Leu Lys Ala Leu Glu Val	Lys Glu Tyr Glu Pro	Gln Glu Asp Cys Ser		
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Ser Pro Ala Ala Leu Asp	Ser Asn His Asn Met	Ala Pro Pro Ser Asp		
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Trp Ser Pro Ser Trp Val	Met Trp Leu Glu Pro	Arg Cys Leu Tyr		
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555	560	565	570	
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571	576	581	586	
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Ile Arg Cys Gly Asp Ile	Leu Leu Ala Val Asn	Gly Arg Ser Thr Ser		
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 65             70             75             80

cta ccc act tta ctg agg cat gca ttc agg gaa atg ttt tca gtc ggg      768
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 Thr Arg *
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 28 33 38 43

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Thr Thr Ala Glu Ile Tyr Ala Tyr Arg Glu Glu Gln Asp Phe Gly Ile	
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gag ata gtg aaa gtg aaa gca att gga aga caa agg ttc aaa gtc ctt	544
Glu Ile Val Lys Val Lys Ala Ile Gly Arg Gln Arg Phe Lys Val Leu	
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Glu Leu Arg Thr Gln Ser Asp Gly Ile Gln Gln Ala Lys Val Gln Ile	
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Leu Pro Glu Cys Val Leu Pro Ser Thr Met Ser Ala Val Gln Leu Glu	
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Ser Leu Asn Lys Cys Gln Ile Phe Pro Ser Lys Pro Val Ser Arg Glu	
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Asp Gln Cys Ser Tyr Lys Trp Trp Gln Lys Tyr Gln Lys Arg Lys Phe	
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cat tgt gca aat cta act tca tgg cct cgc tgg ctg tat tcc tta tat	784
His Cys Ala Asn Leu Thr Ser Trp Pro Arg Trp Leu Tyr Ser Leu Tyr	
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gat gct gag acc tta atg gac aga atc aag aaa cag cta cgt gaa tgg	832
Asp Ala Glu Thr Leu Met Asp Arg Ile Lys Lys Gln Leu Arg Glu Trp	
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gat gaa aat cta aaa gat gat tct ctt cct tca aat cca ata gat ttt	880
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Ser Tyr Arg Val Ala Ala Cys Leu Pro Ile Asp Asp Val Leu Arg Ile	
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Gln Leu Leu Lys Ile Gly Ser Ala Ile Gln Arg Leu Arg Cys Glu Leu	
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300 305 310 315	
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Thr Glu Ile Thr Thr Lys Asn Glu Ile Phe Ser Leu Ser Leu Cys Gly	
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Glu His Ser Trp Phe Pro Gly Tyr Ala Trp Thr Val Ala Gln Cys Lys	
364 369 374 379	
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Ile Cys Ala Ser His Ile Gly Trp Lys Phe Thr Ala Thr Lys Lys Asp	
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Met Ser Pro Gln Lys Phe Trp Gly Leu Thr Arg Ser Ala Leu Leu Pro	
396 401 406 411	
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Thr Ile Pro Asp Thr Glu Asp Glu Ile Ser Pro Asp Lys Val Ile Leu	
412 417 422 427	
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Cys Leu *	
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 ccacatagag caaac atg aat gat att tcc caa aag gct gag att aaa gaa 291
 Met Asn Asp Ile Ser Gln Lys Ala Glu Ile Lys Glu
 1 5 10
 atg ctt gct tct gat gat gag gaa gat gta tct tct aaa gta gaa aag 339
 Met Leu Ala Ser Asp Asp Glu Glu Asp Val Ser Ser Lys Val Glu Lys
 13 18 23 28
 gct tat gtt cca aaa tta aca gga act gtg aag ggt aga ttt gct gaa 387
 Ala Tyr Val Pro Lys Leu Thr Gly Thr Val Lys Gly Arg Phe Ala Glu
 29 34 39 44
 atg gag aaa caa aga caa gag gaa caa agg aag aga acg gag gag gaa 435
 Met Glu Lys Gln Arg Gln Glu Glu Gln Arg Lys Arg Thr Glu Glu Glu
 45 50 55 60
 cga aaa cgc aga att gag cag gat atg tta gaa aag agg aaa ata cag 483
 Arg Lys Arg Arg Ile Glu Gln Asp Met Leu Glu Lys Arg Lys Ile Gln
 61 66 71 76
 cgt gaa tta gca aaa agg gct gaa cag att gag gac ata aac aat acg 531

Arg Glu Leu Ala Lys	Arg Ala Glu Gln Ile	Glu Asp Ile Asn Asn Thr	
77	82	87	92
gga act gaa tca gca tca gag gaa gga gat gat tca cta ctt ata act			579
Gly Thr Glu Ser Ala Ser Glu Glu Gly Asp Asp Ser Leu Leu Ile Thr			
93	98	103	108
gtg gta cct gtc aaa tca tat aaa aca tct gga aaa atg aaa aag aat			627
Val Val Pro Val Lys Ser Tyr Lys Thr Ser Gly Lys Met Lys Lys Asn			
109	114	119	124
ttt gag gat cta gaa aaa gaa cgt gaa gag aaa gaa agg atc aag tac			675
Phe Glu Asp Leu Glu Lys Glu Arg Glu Glu Lys Glu Arg Ile Lys Tyr			
125	130	135	140
gag gaa gat aaa aga ata aga tat gaa gaa caa cga cca tct ctc aag			723
Glu Glu Asp Lys Arg Ile Arg Tyr Glu Glu Gln Arg Pro Ser Leu Lys			
141	146	151	156
gaa gca aag tgt ctt tca tta gtt atg gat gat gaa ata gaa agt gaa			771
Glu Ala Lys Cys Leu Ser Leu Val Met Asp Asp Glu Ile Glu Ser Glu			
157	162	167	172
gca aaa aaa gaa tca ctt tct ccc gga aaa ttg aaa cta act ttt gaa			819
Ala Lys Lys Glu Ser Leu Ser Pro Gly Lys Leu Lys Leu Thr Phe Glu			
173	178	183	188
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189	194	199	204
gaa gca aga aaa cgt tta gaa gaa gag aag cgt gct ttt gaa gaa gca			915
Glu Ala Arg Lys Arg Leu Glu Glu Glu Lys Arg Ala Phe Glu Glu Ala			
205	210	215	220
agg cgg caa atg gta aat gaa gat gag gaa aac caa gac aca gca aaa			963
Arg Arg Gln Met Val Asn Glu Asp Glu Glu Asn Gln Asp Thr Ala Lys			
221	226	231	236
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237	242	247	252
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253	258	263	268
gcc aga agg aga ata gag gaa gaa aag aag gcg ttt gct gaa gca agg			1107
Ala Arg Arg Arg Ile Glu Glu Glu Lys Lys Ala Phe Ala Glu Ala Arg			
269	274	279	284
aga aat atg gta gta gat gat gac tcc cca gag atg tat aag aca atc			1155
Arg Asn Met Val Val Asp Asp Asp Ser Pro Glu Met Tyr Lys Thr Ile			
285	290	295	300
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Ser Gln Glu Phe Leu Thr Pro Gly Lys Leu Glu Ile Asn Phe Glu Glu			

gta aca gga gaa ccc aaa cca gaa att aca tgg tgg ttt gaa gga gaa	1923
Val Thr Gly Glu Pro Lys Pro Glu Ile Thr Trp Trp Phe Glu Gly Glu	
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Ile Leu Gln Asp Gly Glu Asp Tyr Gln Tyr Ile Glu Arg Gly Glu Thr	
557 562 567 572	

tac tgc ctt tac tta cca gaa act ttc cca gaa gat gga gga gag tat	2019
Tyr Cys Leu Tyr Leu Pro Glu Thr Phe Pro Glu Asp Gly Gly Glu Tyr	
573 578 583 588	

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Leu Thr Ile Glu Ser Lys Asn *	
605 610	

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gatttatcgc ctattatgca gtaacagtca ataaaatgta cttatggggg ggaattactc	2421
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75 80 85 90

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Asn Glu Lys Ile Thr Ile Pro Ile Thr Pro Ala Phe Leu Gly Gln Leu
 539 544 549 554

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 Arg Ser Gly Arg Ser Ile Glu Lys Val Ser Phe Tyr Leu Gly Phe Ser
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 1 5
 ctg ctg ctg ggg tcc ctg ggc tct atg tgc atc ctc ttc act atc tac 218
 Leu Leu Leu Gly Ser Leu Gly Ser Met Cys Ile Leu Phe Thr Ile Tyr
 11 16 21 26
 tgg atg cag tac tgg cgt ggt ggc ttt gcc tgg aat ggc agc atc tac 266
 Trp Met Gln Tyr Trp Arg Gly Gly Phe Ala Trp Asn Gly Ser Ile Tyr
 27 32 37 42
 atg ttc aac tgg cac cca gtg ctt atg gtt gct ggc atg gtg gta ttc 314
 Met Phe Asn Trp His Pro Val Leu Met Val Ala Gly Met Val Val Phe
 43 48 53 58
 tat gga ggt gcg tca ctg gtg tac cgc ctg ccc cag tcg tgg gtg ggg 362
 Tyr Gly Gly Ala Ser Leu Val Tyr Arg Leu Pro Gln Ser Trp Val Gly
 59 64 69 74
 ccc aaa ctg ccc tgg aaa ctc ctc cat gca gcg ctg cac ctg atg gcc 410
 Pro Lys Leu Pro Trp Lys Leu Leu His Ala Ala Leu His Leu Met Ala
 75 80 85 90
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 Phe Val Leu Thr Val Val Gly Leu Val Ala Val Phe Thr Phe His Asn
 91 96 101 106

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acc act gtc ttc ctc ttc gcc tgc cag tgg ttc ctg ggc ttt gct gtc Thr Thr Val Phe Leu Phe Ala Cys Gln Trp Phe Leu Gly Phe Ala Val 123 128 133 138	554
ttc ctc ctg ccc tgg gcg tcc atg tgg ctg cgc agc ctc cta aaa cct Phe Leu Leu Pro Trp Ala Ser Met Trp Leu Arg Ser Leu Leu Lys Pro 139 144 149 154	602
atc cac gtc ttt ttt gga gcc gcc atc ctc tct ctg tcc atc gca tcc Ile His Val Phe Phe Gly Ala Ala Ile Leu Ser Leu Ser Ile Ala Ser 155 160 165 170	650
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acc-agg cca-tac-cac-agg-ctg-ccc-agg-gag gcg-gtc-ttt gcc-aac-agg Thr Arg Pro Tyr His Ser Leu Pro Ser Glu Ala Val Phe Ala Asn Ser 187 192 197 202	746
acc ggg atg ctg gtg gtg gcc ttt ggg ctg ctg gtg ctc tac atc ctt Thr Gly Met Leu Val Val Ala Phe Gly Leu Leu Val Leu Tyr Ile Leu 203 208 213 218	794
ctg gct tca tct tgg aag cgc cca gag ccg ggg atc ctg acc gac aga Leu Ala Ser Ser Trp Lys Arg Pro Glu Pro Gly Ile Leu Thr Asp Arg 219 224 229 234	842
cag ccc ctg ctg cat gat ggg gag tga agcag caggaagggg ctcccaagag Gln Pro Leu Leu His Asp Gly Glu * 235 240	894
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ggtttcagca ggcgactttc ttccaatgct gggcccagac ttcttgctg ggtgctggcc	1014
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                                   Met Ala Cys Leu Gly Leu Tyr Cys
                                   1              5

ggg aag acc cta tta ttt aaa aat ggc tca act gaa ata tat gga gaa      159
Gly Lys Thr Leu Leu Phe Lys Asn Gly Ser Thr Glu Ile Tyr Gly Glu
  9      14      19      24
tgt ggg gta tgc cca aga gga cag aga acg aat gca cag aaa tat tgt      207
Cys Gly Val Cys Pro Arg Gly Gln Arg Thr Asn Ala Gln Lys Tyr Cys
  25      30      35      40

cag cct tgc aca gaa tct cct gaa ctt tat gat tgg ctc tat ctt gga      255
Gln Pro Cys Thr Glu Ser Pro Glu Leu Tyr Asp Trp Leu Tyr Leu Gly
  41      46      51      56

ttt atg gca atg ctt cct ctg gtt tta cat tgg ttc ttc att gaa tgg      303
Phe Met Ala Met Leu Pro Leu Val Leu His Trp Phe Phe Ile Glu Trp
  57      62      67      72

tac tcg ggg aaa aag agt tcc agc gca ctt ttc caa cac atc act gca      351
Tyr Ser Gly Lys Lys Ser Ser Ser Ala Leu Phe Gln His Ile Thr Ala
  73      78      83      88

tta ttt gaa tgc agc atg gca gct att atc acc tta ctt gtg agt gat      399
Leu Phe Glu Cys Ser Met Ala Ala Ile Ile Thr Leu Leu Val Ser Asp
  89      94      99      104

cca gtt ggt gtt ctt tat att cgt tca tgt cga gta ttg atg ctt tct      447
Pro Val Gly Val Leu Tyr Ile Arg Ser Cys Arg Val Leu Met Leu Ser
  105      110      115      120

gac tgg tac acg atg ctt tac aac cca agt cca gat tac gtt acc aca      495
Asp Trp Tyr Thr Met Leu Tyr Asn Pro Ser Pro Asp Tyr Val Thr Thr
  121      126      131      136

gta cac tgt act cat gaa gcc gtc tac cca cta tat acc att gta ttt      543
Val His Cys Thr His Glu Ala Val Tyr Pro Leu Tyr Thr Ile Val Phe
  137      142      147      152

atc tat tac gca ttc tgc ttg gta tta atg atg ctg ctc cga cct ctt      591
Ile Tyr Tyr Ala Phe Cys Leu Val Leu Met Met Leu Leu Arg Pro Leu
  153      158      163      168

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ctg gtg aag aag att gca tgt ggg tta ggg aaa tct gat cga ttt aaa Leu Val Lys Lys Ile Ala Cys Gly Leu Gly Lys Ser Asp Arg Phe Lys 169 174 179 184	639
agt att tat gct gca ctt tac ttc ttc cca att tta acc gtg ctt cag Ser Ile Tyr Ala Ala Leu Tyr Phe Phe Pro Ile Leu Thr Val Leu Gln 185 190 195 200	687
gca gtt ggt gga ggc ctt tta tat tac gcc ttc cca tac att ata tta Ala Val Gly Gly Gly Leu Leu Tyr Tyr Ala Phe Pro Tyr Ile Ile Leu 201 206 211 216	735
gtg tta tct ttg gtt act ctg gct gtg tac atg tct gct tct gaa ata Val Leu Ser Leu Val Thr Leu Ala Val Tyr Met Ser Ala Ser Glu Ile 217 222 227 232	783
gag aac tgc tat gat ctt ctg gtc aga aag aaa aga ctt att gtt ctc Glu Asn Cys Tyr Asp Leu Leu Val Arg Lys Lys Arg Leu Ile Val Leu 233 238 243 248	831
ttc agc cac tgg tta ctt cat gcc tat gga ata atc tcc att tcc aga Phe Ser His Trp Leu Leu His Ala Tyr Gly Ile Ile Ser Ile Ser Arg 249 254 259 264	879
gtg gat aaa ctt gag caa gat ttg ccc ctt ttg gct ttg gta cct aca Val Asp Lys Leu Glu Gln Asp Leu Pro Leu Leu Ala Leu Val Pro Thr 265 270 275 280	927
cca gcc ctt ttt tac ttg ttc act gca aaa ttt acc gaa cct tca agg Pro Ala Leu Phe Tyr Leu Phe Thr Ala Lys Phe Thr Glu Pro Ser Arg 281 286 291 296	975
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ggtctgatag caaacataga aatgatgtat attgtttttt gttatctatt tattttcatc	1506
aatacagtat tttgatgtat tgcaaaaata gataataatt tatataacag gttttctgtt	1566
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1650

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gaaagctact gaacttc atg ctt gac aat ctc gca gtt cat cca gag cag 170

Met Leu Asp Asn Leu Ala Val His Pro Glu Gln

1

5

ctt cct ccg agg cca tgg att aca tta aaa gaa cga gac caa att ctg 218

Leu Pro Pro Arg Pro Trp Ile Thr Leu Lys Glu Arg Asp Gln Ile Leu

12

17

22

27

ccg tca gca tca ttc acg gtt atg tgt tac aat gtg tta tgt gat aaa 266

Pro Ser Ala Ser Phe Thr Val Met Cys Tyr Asn Val Leu Cys Asp Lys

28

33

38

43

tac gct acc cgg cag cta tat ggc tat tgc cca tcc tgg gca tta aac 314

Tyr Ala Thr Arg Gln Leu Tyr Gly Tyr Cys Pro Ser Trp Ala Leu Asn

44

49

54

59

tgg gaa tac agg aaa aag gga att atg gaa gaa att gtt aac tgt gac 362

Trp Glu Tyr Arg Lys Lys Gly Ile Met Glu Glu Ile Val Asn Cys Asp

60

65

70

75

gca gat atc att agt ctt cag gaa gtg gaa aca gag caa tac ttc act 410

Ala Asp Ile Ile Ser Leu Gln Glu Val Glu Thr Glu Gln Tyr Phe Thr

76

81

86

91

ctc ttt ctg cca gca ttg aag gag cgt gga tat gat gga ttt ttt tct 458

Leu Phe Leu Pro Ala Leu Lys Glu Arg Gly Tyr Asp Gly Phe Phe Ser

92

97

102

107

cca aag tca cgt gcc aaa atc atg tct gag cag gag aga aag cat gta 506

Pro Lys Ser Arg Ala Lys Ile Met Ser Glu Gln Glu Arg Lys His Val

108

113

118

123

gat ggt tgt gca ata ttc ttc aaa aca gaa aaa ttt aca ttg gtg cag 554

Asp Gly Cys Ala Ile Phe Phe Lys Thr Glu Lys Phe Thr Leu Val Gln

124

129

134

139

aag cat aca gtg gaa ttt aac caa gtg gcg atg gct aat tca gat gga 602

Lys His Thr Val Glu Phe Asn Gln Val Ala Met Ala Asn Ser Asp Gly

140	145	150	155	
tcc gaa gct atg ctg aac aga gtg atg aca aaa gat aac att ggt gtc				650
Ser Glu Ala Met Leu Asn Arg Val Met Thr Lys Asp Asn Ile Gly Val				
156	161	166	171	
gct gtg gta tta gag gtc cac aaa gaa cta ttt gga gca ggt atg aag				698
Ala Val Val Leu Glu Val His Lys Glu Leu Phe Gly Ala Gly Met Lys				
172	177	182	187	
cct att cat gct gca gac aaa cag ctg ctt ata gtg gca aat gcc cac				746
Pro Ile His Ala Ala Asp Lys Gln Leu Leu Ile Val Ala Asn Ala His				
188	193	198	203	
atg cat tgg gac cca gag tat tct gat gtg aag ctc atc cag acc atg				794
Met His Trp Asp Pro Glu Tyr Ser Asp Val Lys Leu Ile Gln Thr Met				
204	209	214	219	
atg ttt gtc tca gag gtt aaa aac att ctg gag aaa gcc tct agt agg				842
Met Phe Val Ser Glu Val Lys Asn Ile Leu Glu Lys Ala Ser Ser Arg				
220	225	230	235	
cct gga agc cca act gca gat cct aat tcc atc ccg ctg gtg cta tgt				890
Pro Gly Ser Pro Thr Ala Asp Pro Asn Ser Ile Pro Leu Val Leu Cys				
236	241	246	251	
gca gat ctt aac tca ttg cca gat tca ggt gtt gtg gaa tac tta agc				938
Ala Asp Leu Asn Ser Leu Pro Asp Ser Gly Val Val Glu Tyr Leu Ser				
252	257	262	267	
aat gga gga gta gct gac aac cat aaa gac ttc aag gaa cta agg tac				986
Asn Gly Gly Val Ala Asp Asn His Lys Asp Phe Lys Glu Leu Arg Tyr				
268	273	278	283	
aat gag tgt ctt atg aac ttc agc tgc aat gga aag aat gga agc tca				1034
Asn Glu Cys Leu Met Asn Phe Ser Cys Asn Gly Lys Asn Gly Ser Ser				
284	289	294	299	
gaa ggg aga atc aca cat ggc ttc caa ctt aag agc gcc tat gaa aat				1082
Glu Gly Arg Ile Thr His Gly Phe Gln Leu Lys Ser Ala Tyr Glu Asn				
300	305	310	315	
aac ttg atg cct tac acc aat tac acc ttt gat ttc aaa ggc gtg att				1130
Asn Leu Met Pro Tyr Thr Asn Tyr Thr Phe Asp Phe Lys Gly Val Ile				
316	321	326	331	
gac tac att ttc tat tcc aag act cat atg aac gtg ctt ggt gtc ctg				1178
Asp Tyr Ile Phe Tyr Ser Lys Thr His Met Asn Val Leu Gly Val Leu				
332	337	342	347	
ggg cct tta gat cct caa tgg ctg gtt gag aac aac atc act ggg tgt				1226
Gly Pro Leu Asp Pro Gln Trp Leu Val Glu Asn Asn Ile Thr Gly Cys				
348	353	358	363	
cca cac cct cac atc cct tca gac cac ttc tca ctg tta aca caa ctt				1274
Pro His Pro His Ile Pro Ser Asp His Phe Ser Leu Leu Thr Gln Leu				
364	369	374	379	

gaa ctc cac cct cca ctc ctg cct ctt gtc aat ggt gtt cac ttg cct 1322
 Glu Leu His Pro Pro Leu Leu Pro Leu Val Asn Gly Val His Leu Pro
 380 385 390 395

aat cgg agg tag tgg agtactgccc cgccaagacg gggatctggt gctatggacc 1377
 Asn Arg Arg *
 396

tgtacagttg taaatcaaag tatgtaggag tgaagtatgg ccataccttaa gctgcttctt 1437

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ctatagttaa cataccatca aattcacctt tttgatgtat acaactcagg ggtgattagt 180

atattcacaa aaggtgtgct agcatcacca ctgtctcatt ttggagcatt ttcattgcccc 240

caccatgaag accatgtcca ctggcagcca ttcccatgac ctttccttgt gagatctcca 300

gttatcactt tgcacaagct gatgaattgc tgttcttgat aatactgagc tttcacaaac 360

acagttgcca gagaaacatc agcgggcttt agctggggca gagcttagca agtggtgggg 420

tatcagcagt tagtcactgt ttgcctggaa ccacaggatg tgaatcctag ttcttggtatt 480

ccaaggaatc ctgcatccag gtgtttattg tgctttgcag agtcaacatc aagctcagga 540

gctgggtgca gacatagatg agtgtgaagt ttctggcctg tgcaggcatg gagggcgatg 600

cgtgaacact catgggagct ttgaatgcta ctgt atg gat gga tac ttg cca 652
 Met Asp Gly Tyr Leu Pro
 1

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 Arg Asn Gly Pro Glu Pro Phe His Pro Thr Thr Asp Ala Thr Ser Cys
 7 12 17 22

aca gaa ata gac tgt ggt acc cct cct gag gtt cca gat ggc tat atc 748

Thr Glu Ile Asp Cys Gly Thr Pro Pro Glu Val Pro Asp Gly Tyr Ile	
23 28 33 38	
ata gga aat tat acg tct agt ctg ggc agc cag gtt cgt tat gct tgc	796
Ile Gly Asn Tyr Thr Ser Ser Leu Gly Ser Gln Val Arg Tyr Ala Cys	
39 44 49 54	
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Arg Glu Gly Phe Phe Ser Val Pro Glu Asp Thr Val Ser Ser Cys Thr	
55 60 65 70	
ggc ctg ggc aca tgg gag tcc cca aaa tta cat tgc caa gag atc aac	892
Gly Leu Gly Thr Trp Glu Ser Pro Lys Leu His Cys Gln Glu Ile Asn	
71 76 81 86	
tgt ggc aac cct cca gaa atg cgg cac gcc atc ttg gta gga aat cac	940
Cys Gly Asn Pro Pro Glu Met Arg His Ala Ile Leu Val Gly Asn His	
87 92 97 102	
agc tcc agg ctg ggc ggt gtg gct cgc tat gtc tgt caa gag ggc ttt	988
Ser Ser Arg Leu Gly Gly Val Ala Arg Tyr Val Cys Gln Glu Gly Phe	
103 108 113 118	
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Glu Ser Pro Gly Gly Lys Ile Thr Ser Val Cys Thr Glu Lys Gly Thr	
119 124 129 134	
tgg aga gaa agt act tta aca tgc aca gaa att ctg aca aag att aat	1084
Trp Arg Glu Ser Thr Leu Thr Cys Thr Glu Ile Leu Thr Lys Ile Asn	
135 140 145 150	
gat gta tca ctg ttt aat gat acc tgt gtg aga tgg caa ata aac tca	1132
Asp Val Ser Leu Phe Asn Asp Thr Cys Val Arg Trp Gln Ile Asn Ser	
151 156 161 166	
aga aga ata aac ccc aag atc tca tat gtg ata tcc ata aaa gga caa	1180
Arg Arg Ile Asn Pro Lys Ile Ser Tyr Val Ile Ser Ile Lys Gly Gln	
167 172 177 182	
cgg ttg gac cct atg gaa tca gtt cgt gag gag aca gtc aac ttg acc	1228
Arg Leu Asp Pro Met Glu Ser Val Arg Glu Glu Thr Val Asn Leu Thr	
183 188 193 198	
aca gac agc agg acc cca gaa gtg tgc cta gcc ctg tac cca ggc acc	1276
Thr Asp Ser Arg Thr Pro Glu Val Cys Leu Ala Leu Tyr Pro Gly Thr	
199 204 209 214	
aac tac acc gtg aac atc tcc aca gca cct ccc agg cgc tcg atg cca	1324
Asn Tyr Thr Val Asn Ile Ser Thr Ala Pro Pro Arg Arg Ser Met Pro	
215 220 225 230	
gcc gtc atc ggt ttc cag aca gct gaa gtt gat ctc tta gaa gat gat	1372
Ala Val Ile Gly Phe Gln Thr Ala Glu Val Asp Leu Leu Glu Asp Asp	
231 236 241 246	
gga agt ttc aat att tca ata ttt aat gaa act tgt ttg aaa ttg aac	1420
Gly Ser Phe Asn Ile Ser Ile Phe Asn Glu Thr Cys Leu Lys Leu Asn	

247	252	257	262	
agg cgt tct agg aaa gtt gga tca gaa cac atg tac caa ttt acc gtt				1468
Arg Arg Ser Arg Lys Val Gly Ser Glu His Met Tyr Gln Phe Thr Val				
263	268	273	278	
ctg ggt cag agg tgg tat ctg gct aac ttt tct cat gca aca tcg ttt				1516
Leu Gly Gln Arg Trp Tyr Leu Ala Asn Phe Ser His Ala Thr Ser Phe				
279	284	289	294	
aac ttc aca acg agg gaa caa gtg cct gta gtg tgt ttg gat ctg tac				1564
Asn Phe Thr Thr Arg Glu Gln Val Pro Val Val Cys Leu Asp Leu Tyr				
295	300	305	310	
cct acg act gat tat acg gtg aat gtg acc ctg ctg aga tct cct aag				1612
Pro Thr Thr Asp Tyr Thr Val Asn Val Thr Leu Leu Arg Ser Pro Lys				
311	316	321	326	
cgg cac tca gtg caa ata aca ata gca act ccc cca gca gta aaa cag				1660
Arg His Ser Val Gln Ile Thr Ile Ala Thr Pro Pro Ala Val Lys Gln				
327	332	337	342	
acc atc agt aac att tca gga ttt aat gaa acc tgc ttg aga tgg aga				1708
Thr Ile Ser Asn Ile Ser Gly Phe Asn Glu Thr Cys Leu Arg Trp Arg				
343	348	353	358	
agc atc aag aca gct gat atg gag gag atg tat tta ttc cac att tgg				1756
Ser Ile Lys Thr Ala Asp Met Glu Glu Met Tyr Leu Phe His Ile Trp				
359	364	369	374	
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Gly Gln Arg Trp Tyr Gln Lys Glu Phe Ala Gln Glu Met Thr Phe Asn				
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atc agt agc agc agc cga gat ccc gag gtg tgc ttg gac cta cgt ccg				1852
Ile Ser Ser Ser Ser Arg Asp Pro Glu Val Cys Leu Asp Leu Arg Pro				
391	396	401	406	
ggt acc aac tac aat gtc agt ctc cgg gct ctg tct tcg gaa ctt cct				1900
Gly Thr Asn Tyr Asn Val Ser Leu Arg Ala Leu Ser Ser Glu Leu Pro				
407	412	417	422	
gtg gtc atc tcc ctg aca acc cag ata aca gag cct ccc ctc ccg gaa				1948
Val Val Ile Ser Leu Thr Thr Gln Ile Thr Glu Pro Pro Leu Pro Glu				
423	428	433	438	
gta gaa ttt ttt acg gtg cac aga gga cct cta cca cgc ctc aga ctg				1996
Val Glu Phe Phe Thr Val His Arg Gly Pro Leu Pro Arg Leu Arg Leu				
439	444	449	454	
agg aaa gcc aag gag aaa aat gga cca atc agt tca tat cag gtg tta				2044
Arg Lys Ala Lys Glu Lys Asn Gly Pro Ile Ser Ser Tyr Gln Val Leu				
455	460	465	470	
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Val Leu Pro Leu Ala Leu Gln Ser Thr Phe Ser Cys Asp Ser Glu Gly				
471	476	481	486	

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Ile Gly Asp Arg Leu Tyr Tyr Gly Glu Tyr Tyr Asn Ala Pro Leu Lys	
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Arg Gly Ser Asp Tyr Cys Ile Ile Leu Arg Ile Thr Ser Glu Trp Asn	
535 540 545 550	
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Lys Val Arg Arg His Ser Cys Ala Val Trp Ala Gln Val Lys Asp Ser	
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Ser Leu Met Leu Leu Gln Met Ala Gly Val Gly Leu Gly Ser Leu Ala	
567 572 577 582	
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Val Val Ile Ile Leu Thr Phe Leu Ser Phe Ser Ala Val *	
583 588 593	
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Pro Leu Phe Glu Ala Glu Glu Gly Val Leu Ser Arg Thr Gln Ile Phe
2 7 12 17

cct acc act att aaa gtc att gat cca gaa ttt ctg gag gag cca cct 151
Pro Thr Thr Ile Lys Val Ile Asp Pro Glu Phe Leu Glu Glu Pro Pro
18 23 28 33

gca ctt gca ttt tta tat aag gat ctg tat gaa gaa gca gtt gga gag 199
Ala Leu Ala Phe Leu Tyr Lys Asp Leu Tyr Glu Glu Ala Val Gly Glu
34 39 44 49

aaa aag aag gaa gag gag aca gct tct gaa ggt gac agt gtg aat tct 247
Lys Lys Lys Glu Glu Glu Thr Ala Ser Glu Gly Asp Ser Val Asn Ser
50 55 60 65

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Glu Ala Ser Phe Pro Ser Arg Asn Ser Asp Thr Asp Asp Gly Thr Gly
66 71 76 81

ata tat ttt gag aag tac ata ctc aaa gat gac att ctc cat gac aca 343
Ile Tyr Phe Glu Lys Tyr Ile Leu Lys Asp Asp Ile Leu His Asp Thr
82 87 92 97

tct cta act caa aag gac cag ggc caa ggt ctg gaa gaa aaa cga gtt 391
Ser Leu Thr Gln Lys Asp Gln Gly Gln Gly Leu Glu Glu Lys Arg Val
98 103 108 113

ggt aag gat gat tca tac caa ccg ata gct gca gaa ggg gaa att tgg 439
Gly Lys Asp Asp Ser Tyr Gln Pro Ile Ala Ala Glu Gly Glu Ile Trp
114 119 124 129

gga aag ttt gga act att tgc agg gag aag agt ctg gaa gaa cag aaa 487
Gly Lys Phe Gly Thr Ile Cys Arg Glu Lys Ser Leu Glu Glu Gln Lys
130 135 140 145

ggt gtt tat ggg gaa gga gaa tca gta gac cat gtg gag acc gtt ggt 535
Gly Val Tyr Gly Glu Gly Glu Ser Val Asp His Val Glu Thr Val Gly
146 151 156 161

aac gta gcg atg cag aag aaa gct ccc atc aca gag gac gtc aga gtg 583
Asn Val Ala Met Gln Lys Lys Ala Pro Ile Thr Glu Asp Val Arg Val
162 167 172 177

gct acc cag aaa ata agt tat gcg gtt cca ttt gaa gac acc cat cat 631
Ala Thr Gln Lys Ile Ser Tyr Ala Val Pro Phe Glu Asp Thr His His
178 183 188 193

gtt ctg gag cgt gca gat gaa gca ggc agt cac ggt aat gaa gtc gga 679
Val Leu Glu Arg Ala Asp Glu Ala Gly Ser His Gly Asn Glu Val Gly
194 199 204 209

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Asn Ala Ser Pro Glu Val Asn Leu Asn Val Pro Val Gln Val Ser Phe	
210 215 220 225	
ccg gag gaa gaa ttt gca tct ggt gca act cat gtt caa gaa aca tca	775
Pro Glu Glu Glu Phe Ala Ser Gly Ala Thr His Val Gln Glu Thr Ser	
226 231 236 241	
cta gaa gaa cct aaa atc ctg gtc cca cct gag cca agt gaa gag agg	823
Leu Glu Glu Pro Lys Ile Leu Val Pro Pro Glu Pro Ser Glu Glu Arg	
242 247 252 257	
ctc cgt aat agc cct gtt cag gat gag tat gaa ttt aca gaa tcc ctg	871
Leu Arg Asn Ser Pro Val Gln Asp Glu Tyr Glu Phe Thr Glu Ser Leu	
258 263 268 273	
cat aat gaa gtg gtt cct caa gac ata tta tca gaa gaa ctg tct tca	919
His Asn Glu Val Val Pro Gln Asp Ile Leu Ser Glu Glu Leu Ser Ser	
274 279 284 289	
gaa tcc aca cct gaa gat gtc tta tct caa gga aag gaa tcc ttt gag	967
Glu Ser Thr Pro Glu Asp Val Leu Ser Gln Gly Lys Glu Ser Phe Glu	
290 295 300 305	
cac atc agt gaa aat gaa ttt gcg agt gag gca gaa caa agt aca cct	1015
His Ile Ser Glu Asn Glu Phe Ala Ser Glu Ala Glu Gln Ser Thr Pro	
306 311 316 321	
gct gaa caa aaa gag ttg ggc agc gag agg aaa gaa gaa gac caa tta	1063
Ala Glu Gln Lys Glu Leu Gly Ser Glu Arg Lys Glu Glu Asp Gln Leu	
322 327 332 337	
tca tct gag gta gta act gaa aag gca caa aaa gag ctg aaa aag tcc	1111
Ser Ser Glu Val Val Thr Glu Lys Ala Gln Lys Glu Leu Lys Lys Ser	
338 343 348 353	
cag att gac aca tac tgt tac acc tgc aaa tgt cca att tct gcc act	1159
Gln Ile Asp Thr Tyr Cys Tyr Thr Cys Lys Cys Pro Ile Ser Ala Thr	
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Asp Lys Val Phe Gly Thr His Lys Asp His Glu Val Ser Thr Leu Asp	
370 375 380 385	
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Thr Ala Ile Ser Ala Val Lys Val Gln Leu Ala Glu Phe Leu Glu Asn	
386 391 396 401	
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Leu Gln Glu Lys Ser Leu Arg Ile Glu Ala Phe Val Ser Glu Ile Glu	
402 407 412 417	
tcc ttt ttt aat acc att gag gaa aac tgt agt aaa aat gag aaa agg	1351
Ser Phe Phe Asn Thr Ile Glu Glu Asn Cys Ser Lys Asn Glu Lys Arg	
418 423 428 433	
cta gaa gaa cag aat gag gaa atg atg aag aag gtt tta gca cag tat	1399

Leu Glu Glu Gln Asn Glu Glu Met Met Lys Lys Val Leu Ala Gln Tyr	
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Asp Glu Lys Ala Gln Ser Phe Glu Glu Val Lys Lys Lys Lys Met Glu	
450	455 460 465
ttc ctg cat gag cag atg gtc cac ttt ctg cag agc atg gac act gcc	1495
Phe Leu His Glu Gln Met Val His Phe Leu Gln Ser Met Asp Thr Ala	
466	471 476 481
aaa gac acc ctg gag acc atc gtg aga gaa gca gag gag ctt gat gag	1543
Lys Asp Thr Leu Glu Thr Ile Val Arg Glu Ala Glu Glu Leu Asp Glu	
482	487 492 497
gcc gtc ttc ctg act tcg ttt gag gaa atc aat gaa agg ttg ctt tct	1591
Ala Val Phe Leu Thr Ser Phe Glu Glu Ile Asn Glu Arg Leu Leu Ser	
498	503 508 513
gca atg gag agc act gct tct tta gag aaa atg cct gct gcg ttt tcc	1639
Ala Met Glu Ser Thr Ala Ser Leu Glu Lys Met Pro Ala Ala Phe Ser	
514	519 524 529
ctt ttc gaa cat tat gat gac agc tcg gca aga agt gac cag atg tta	1687
Leu Phe Glu His Tyr Asp Asp Ser Ser Ala Arg Ser Asp Gln Met Leu	
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Lys Gln Val Ala Val Pro Gln Pro Pro Arg Leu Glu Pro Gln Glu Pro	
546	551 556 561
aat tct gcc acc agc aca aca att gca gtt tac tgg agc atg aac aag	1783
Asn Ser Ala Thr Ser Thr Thr Ile Ala Val Tyr Trp Ser Met Asn Lys	
562	567 572 577
gaa gat gtc att gat tca ttt cag gtt tac tgc atg gag gag cca caa	1831
Glu Asp Val Ile Asp Ser Phe Gln Val Tyr Cys Met Glu Glu Pro Gln	
578	583 588 593
gat gat caa gaa gta aat gag ttg gta gaa gaa tac aga ctg aca gtg	1879
Asp Asp Gln Glu Val Asn Glu Leu Val Glu Glu Tyr Arg Leu Thr Val	
594	599 604 609
aaa gaa agc tac tgc att ttt gaa gat ctg gaa cct gac cga tgc tat	1927
Lys Glu Ser Tyr Cys Ile Phe Glu Asp Leu Glu Pro Asp Arg Cys Tyr	
610	615 620 625
caa gtg tgg gtg atg gct gtg aac ttc act gga tgt agc ctg ccc agt	1975
Gln Val Trp Val Met Ala Val Asn Phe Thr Gly Cys Ser Leu Pro Ser	
626	631 636 641
gaa agg gcc atc ttt agg aca gca ccc tcc acc cct gtg atc cgc gct	2023
Glu Arg Ala Ile Phe Arg Thr Ala Pro Ser Thr Pro Val Ile Arg Ala	
642	647 652 657
gag gac tgt act gtg tgt tgg aac aca gcc act atc cga tgg cgg ccc	2071
Glu Asp Cys Thr Val Cys Trp Asn Thr Ala Thr Ile Arg Trp Arg Pro	

658	663	668	673	
acc acc cca gag gcc	acg gag acc tac act	ctg gag tac tgc aga cag		2119
Thr Thr Pro Glu Ala	Thr Glu Thr Tyr Thr	Leu Glu Tyr Cys Arg Gln		
674	679	684	689	
cac tct cct gag gga	gag ggc ctc aga tct	ttc tct gga atc aaa gga		2167
His Ser Pro Glu Gly	Glu Gly Leu Arg Ser	Phe Ser Gly Ile Lys Gly		
690	695	700	705	
ctc cag ctg aaa gtt	aac ctc caa ccc aat	gat aac tac ttt ttc tat		2215
Leu Gln Leu Lys Val	Asn Leu Gln Pro Asn	Asp Asn Tyr Phe Phe Tyr		
706	711	716	721	
gtg agg gcc atc aat	gca ttt ggg aca agt	gaa cag agt gaa gct gct		2263
Val Arg Ala Ile Asn	Ala Phe Gly Thr Ser	Glu Gln Ser Glu Ala Ala		
722	727	732	737	
ctc atc tcc acc aga	gga acc aga ttt ctc	ttg ttg aga gaa aca gct		2311
Leu Ile Ser Thr Arg	Gly Thr Arg Phe Leu	Leu Leu Arg Glu Thr Ala		
738	743	748	753	
cat cct gct cta cac	att tcc tca agt ggg	aca gtg atc agc ttt ggt		2359
His Pro Ala Leu His	Ile Ser Ser Ser Gly	Thr Val Ile Ser Phe Gly		
754	759	764	769	
gag agg aga cgg ctg	acg gaa atc ccg tca	gtg ctg ggt gag gag ctg		2407
Glu Arg Arg Arg Leu	Thr Glu Ile Pro Ser	Val Leu Gly Glu Glu Leu		
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cct tcc tgt ggc cag	cat tac tgg gaa acc	aca gtc aca gac tgc cca		2455
Pro Ser Cys Gly Gln	His Tyr Trp Glu Thr	Thr Val Thr Asp Cys Pro		
786	791	796	801	
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Ala Tyr Arg Leu Gly	Ile Cys Ser Ser Ser	Ala Val Gln Ala Gly Ala		
802	807	812	817	
cta gga caa ggg gag	acc tca tgg tac atg	cac tgc tct gag cca cag		2551
Leu Gly Gln Gly Glu	Thr Ser Trp Tyr Met	His Cys Ser Glu Pro Gln		
818	823	828	833	
aga tac aca ttt ttc	tac agt ggt att gtg	agt gat gtt cat gtg act		2599
Arg Tyr Thr Phe Phe	Tyr Ser Gly Ile Val	Ser Asp Val His Val Thr		
834	839	844	849	
gag cgt cca gcc aga	gtg ggc atc ctg ctg	gac tac aac aac cag aga		2647
Glu Arg Pro Ala Arg	Val Gly Ile Leu Leu	Asp Tyr Asn Asn Gln Arg		
850	855	860	865	
ctt atc ttc atc aac	gca gag agc gag cag	ttg ctc ttc atc atc agg		2695
Leu Ile Phe Ile Asn	Ala Glu Ser Glu Gln	Leu Leu Phe Ile Ile Arg		
866	871	876	881	
cac agg ttt aat gag	ggt gtc cac cct gcc	ttt gcc ctg gag aaa cct		2743
His Arg Phe Asn Glu	Gly Val His Pro Ala	Phe Ala Leu Glu Lys Pro		
882	887	892	897	

gga aaa tgt act ttg cac ctg ggg ata gag ccc ccg gat tct gta agg 2791
 Gly Lys Cys Thr Leu His Leu Gly Ile Glu Pro Pro Asp Ser Val Arg
 898 903 908 913

cac aag tga tccttgg ctttcagaat ttgcaagaac agcgatttga attttggggg 2847
 His Lys *
 914

ggtctgctgt tcattccttt aggtgctata cattattcaa aaagtctccc gcgcatttgc 2907

actaatgatg gctgcatgca tagcaatcag catgtgagca aaatcgacaa gaaaaccttg 2967

actttacaga gcagtgtgtg agtaaacaga atgaaaacaa caacctccac tcttttagttt 3027

atataagttt gagttctttc ctaaattaaa agatctacac ttgagttggg aaccgaaaga 3087

gaaaaatgga cttccatctg ttttactggt aaaggaaatc ctctgatgga caggtcagag 3147

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gatttaaatt tataatgaac tcttttgtaa taatgtatac tgtagaacat gagtctctcc 3327

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 Lys Arg Ala Ala Leu Phe Phe Ala Ala Val Ala Ile Val Leu Gly Leu
 17 22 27 32

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 Pro Leu Trp Trp Lys Thr Thr Glu Thr Tyr Arg Ala Ser Leu Pro Tyr
 33 38 43 48

tcc cag atc agt ggc ctg aat gcc ctt cag ctc cgc ctc atg gtg cct 192
 Ser Gln Ile Ser Gly Leu Asn Ala Leu Gln Leu Arg Leu Met Val Pro
 49 54 59 64

gtc act gtc gtg ttt acg cgg gag tca gtg ccc ctg gac gac cag gag	240
Val Thr Val Val Phe Thr Arg Glu Ser Val Pro Leu Asp Asp Gln Glu	
65 70 75 80	
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Lys Leu Pro Phe Thr Val Val His Glu Arg Glu Ile Pro Leu Lys Tyr	
81 86 91 96	
aaa atg aaa atc aaa tgc cgt ttc cag aag gcc tat cgg agg gct ttg	336
Lys Met Lys Ile Lys Cys Arg Phe Gln Lys Ala Tyr Arg Arg Ala Leu	
97 102 107 112	
gac cat gag gag gag gcc ctg tca tcg ggc agt gtg caa gag gca gaa	384
Asp His Glu Glu Glu Ala Leu Ser Ser Gly Ser Val Gln Glu Ala Glu	
113 118 123 128	
gcc atg tta gat gag cct cag gaa caa gcg gag ggc tcc ctg act gtg	432
Ala Met Leu Asp Glu Pro Gln Glu Gln Ala Glu Gly Ser Leu Thr Val	
129 134 139 144	
tac gtg ata tct gaa cac tcc tca ctt ctt ccc cag gac atg atg agc	480
Tyr Val Ile Ser Glu His Ser Ser Leu Leu Pro Gln Asp Met Met Ser	
145 150 155 160	
tac att ggg ccc aag agg aca gca gtg gtg cgg ggg ata atg cac cgg	528
Tyr Ile Gly Pro Lys Arg Thr Ala Val Val Arg Gly Ile Met His Arg	
161 166 171 176	
gag gcc ttt aac atc att ggc cgc cgc ata gtc cag gtg gcc cag gcc	576
Glu Ala Phe Asn Ile Ile Gly Arg Arg Ile Val Gln Val Ala Gln Ala	
177 182 187 192	
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Met Ser Leu Thr Glu Asp Val Leu Ala Ala Ala Leu Ala Asp His Leu	
193 198 203 208	
cca gag gac aag tgg agc gct gag aag agg cgg cct ctc aag tcc agc	672
Pro Glu Asp Lys Trp Ser Ala Glu Lys Arg Arg Pro Leu Lys Ser Ser	
209 214 219 224	
ttg ggc tat gag atc acc ttc agt tta ctc aac cca gac ccc aag tcc	720
Leu Gly Tyr Glu Ile Thr Phe Ser Leu Leu Asn Pro Asp Pro Lys Ser	
225 230 235 240	
cat gat gtc tac tgg gac att gag ggg gct gtc cgg cgc tat gtg caa	768
His Asp Val Tyr Trp Asp Ile Glu Gly Ala Val Arg Arg Tyr Val Gln	
241 246 251 256	
cct ttc ctg aat gcc ctc ggt gcc gct ggc aac ttc tct gtg gac tct	816
Pro Phe Leu Asn Ala Leu Gly Ala Ala Gly Asn Phe Ser Val Asp Ser	
257 262 267 272	
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Gln Ile Leu Tyr Tyr Ala Met Leu Gly Val Asn Pro Arg Phe Asp Ser	
273 278 283 288	

gct tcc tcc agc tac tat ttg gac atg cac agc ctc ccc cat gtc atc	912
Ala Ser Ser Ser Tyr Tyr Leu Asp Met His Ser Leu Pro His Val Ile	
289 294 299 304	
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Asn Pro Val Glu Ser Arg Leu Gly Ser Ser Ala Ala Ser Leu Tyr Pro	
305 310 315 320	
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Val Leu Asn Phe Leu Leu Tyr Val Pro Glu Leu Ala His Ser Pro Leu	
321 326 331 336	
tac att cag gac aag gat ggc gct cca gtg gcc acc aat gcc ttc cat	1056
Tyr Ile Gln Asp Lys Asp Gly Ala Pro Val Ala Thr Asn Ala Phe His	
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Ser Pro Arg Trp Gly Gly Ile Met Val Tyr Asn Val Asp Ser Lys Thr	
353 358 363 368	
tat aat gcc tca gtg ctg cca gtg aga gtc gag gtg gac atg gtg cga	1152
Tyr Asn Ala Ser Val Leu Pro Val Arg Val Glu Val Asp Met Val Arg	
369 374 379 384	
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Val Met Glu Val Phe Leu Ala Gln Leu Arg Leu Leu Phe Gly Ile Ala	
385 390 395 400	
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Gln Pro Gln Leu Pro Pro Lys Cys Leu Leu Ser Gly Pro Thr Ser Glu	
401 406 411 416	
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Gly Leu Met Thr Trp Glu Leu Asp Arg Leu Leu Trp Ala Arg Ser Val	
417 422 427 432	
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Glu Asn Leu Ala Thr Ala Thr Thr Thr Leu Thr Ser Leu Ala Gln Leu	
433 438 443 448	
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Leu Gly Lys Ile Ser Asn Ile Val Ile Lys Asp Asp Val Ala Ser Glu	
449 454 459 464	
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Val Tyr Lys Ala Val Ala Ala Val Gln Lys Ser Ala Glu Glu Leu Ala	
465 470 475 480	
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Ser Gly His Leu Ala Ser Ala Phe Val Ala Ser Gln Glu Ala Val Thr	
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Ser Ser Glu Leu Ala Phe Phe Asp Pro Ser Leu Leu His Leu Leu Tyr	
497 502 507 512	
ttc cct gat gac cag aag ttt gcc atc tac atc cca ctc ttc ctg cct	1584

Phe	Pro	Asp	Asp	Gln	Lys	Phe	Ala	Ile	Tyr	Ile	Pro	Leu	Phe	Leu	Pro		
513					518					523					528		
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Met	Ala	Val	Pro	Ile	Leu	Leu	Ser	Leu	Val	Lys	Ile	Phe	Leu	Glu	Thr		
529					534					539					544		
cgc	aag	tcc	tgg	aga	aag	cct	gag	aag	aca	gac	tga					1668	
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gggaggagga	agtag	agccc	gggacc	gcca	ggccacc	acc	ggccgc	cctca	gcc	atg						176
										Met						1
gac	gcg	tcc	ctg	gag	aag	ata	gca	gac	ccc	acg	tta	gct	gaa	atg	gga	224
Asp	Ala	Ser	Leu	Glu	Lys	Ile	Ala	Asp	Pro	Thr	Leu	Ala	Glu	Met	Gly	
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aaa	aac	ttg	aag	gag	gca	gtg	aag	atg	ctg	gag	gac	agt	cag	aga	aga	272
Lys	Asn	Leu	Lys	Glu	Ala	Val	Lys	Met	Leu	Glu	Asp	Ser	Gln	Arg	Arg	
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Thr	Glu	Glu	Glu	Asn	Gly	Lys	Lys	Leu	Ile	Ser	Gly	Asp	Ile	Pro	Gly	
34					39					44					49	
cca	ctc	cag	ggc	agt	ggg	caa	gat	atg	gtg	agc	atc	ctc	cag	tta	gtt	368
Pro	Leu	Gln	Gly	Ser	Gly	Gln	Asp	Met	Val	Ser	Ile	Leu	Gln	Leu	Val	
50					55					60					65	
cag	aat	ctc	atg	cat	gga	gat	gaa	gat	gag	gag	ccc	cag	agc	ccc	aga	416
Gln	Asn	Leu	Met	His	Gly	Asp	Glu	Asp	Glu	Glu	Pro	Gln	Ser	Pro	Arg	
66					71					76					81	
atc	caa	aat	att	gga	gaa	caa	ggg	cat	atg	gct	ttg	ttg	gga	cat	agt	464
Ile	Gln	Asn	Ile	Gly	Glu	Gln	Gly	His	Met	Ala	Leu	Leu	Gly	His	Ser	
82					87					92					97	

ctg gga gct tat att tca act ctg gac aaa gag aag ctg aga aaa ctt	512
Leu Gly Ala Tyr Ile Ser Thr Leu Asp Lys Glu Lys Leu Arg Lys Leu	
98 103 108 113	
aca act agg ata ctt tca gat acc acc tta tgg cta tgc aga att ttc	560
Thr Thr Arg Ile Leu Ser Asp Thr Thr Leu Trp Leu Cys Arg Ile Phe	
114 119 124 129	
aga tat gaa aat ggg tgt gct tat ttc cac gaa gag gaa aga gaa gga	608
Arg Tyr Glu Asn Gly Cys Ala Tyr Phe His Glu Glu Glu Arg Glu Gly	
130 135 140 145	
ctt gca aag ata tgt agg ctt gcc att cat tct cga tat gaa gac ttc	656
Leu Ala Lys Ile Cys Arg Leu Ala Ile His Ser Arg Tyr Glu Asp Phe	
146 151 156 161	
gta gtg gat ggc ttc aat gtg tta tat aac aag aag cct gtc ata tat	704
Val Val Asp Gly Phe Asn Val Leu Tyr Asn Lys Lys Pro Val Ile Tyr	
162 167 172 177	
ctt agt gct gct gct aga cct ggc ctg ggc caa tac ctt tgt aat cag	752
Leu Ser Ala Ala Ala Arg Pro Gly Leu Gly Gln Tyr Leu Cys Asn Gln	
178 183 188 193	
ctc ggc ttg ccc ttc ccc tgc ttg tgc cgt gta ccc tgt aac act gtg	800
Leu Gly Leu Pro Phe Pro Cys Leu Cys Arg Val Pro Cys Asn Thr Val	
194 199 204 209	
ttt gga tcc cag cat cag atg gat gtt gcc ttc ctg gag aaa ctg att	848
Phe Gly Ser Gln His Gln Met Asp Val Ala Phe Leu Glu Lys Leu Ile	
210 215 220 225	
aaa gat gat ata gag cga gga aga ctg ccc ctg ttg ctt gtc gca aat	896
Lys Asp Asp Ile Glu Arg Gly Arg Leu Pro Leu Leu Leu Val Ala Asn	
226 231 236 241	
gca gga acg gca gca gta gga cac aca gac aag att ggg aga ttg aaa	944
Ala Gly Thr Ala Ala Val Gly His Thr Asp Lys Ile Gly Arg Leu Lys	
242 247 252 257	
gaa ctc tgt gag cag tat ggc ata tgg ctt cat gtg gag ggt gtg aat	992
Glu Leu Cys Glu Gln Tyr Gly Ile Trp Leu His Val Glu Gly Val Asn	
258 263 268 273	
ctg gca aca ttg gct ctg ggt tat gtc tcc tca tca gtg ctg gct gca	1040
Leu Ala Thr Leu Ala Leu Gly Tyr Val Ser Ser Ser Val Leu Ala Ala	
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Ser Val Ser His Ile	Glu Asp Leu Glu Lys	Val Glu Arg Leu Ser	Ser	
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Ala Asp Pro Gly Ser Arg Gly Leu Leu Arg Leu Leu Ser Phe Cys Val
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cta cta gca ggt ttg tgc agg gga aac tca gtg gag agg aag ata tat      209
Leu Leu Ala Gly Leu Cys Arg Gly Asn Ser Val Glu Arg Lys Ile Tyr
26                               31                               36                               41

atc ccc tta aat aaa aca gct ccc tgt gtt cgc ctg ctc aac gcc act      257
Ile Pro Leu Asn Lys Thr Ala Pro Cys Val Arg Leu Leu Asn Ala Thr
42                               47                               52                               57

cat cag att ggc tgc cag tct tca att agt gga gac aca ggg gtt atc      305
His Gln Ile Gly Cys Gln Ser Ser Ile Ser Gly Asp Thr Gly Val Ile
58                               63                               68                               73

cac gta gta gag aaa gag gag gac cta cag tgg gta ttg act gat ggc      353
His Val Val Glu Lys Glu Glu Asp Leu Gln Trp Val Leu Thr Asp Gly
74                               79                               84                               89

ccc aac ccc cct tac atg gtt ctg ctg gag agc aag cat ttt acc agg      401
Pro Asn Pro Pro Tyr Met Val Leu Leu Glu Ser Lys His Phe Thr Arg
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Asp Leu Met Glu Lys Leu Lys Gly Arg Thr Ser Arg Ile Ala Gly Leu
106                               111                               116                               121

gca gtg tcc ttg acc aag ccc agt cct gcc tca ggc ttc tct cct agt      497
Ala Val Ser Leu Thr Lys Pro Ser Pro Ala Ser Gly Phe Ser Pro Ser
122                               127                               132                               137

gta cag tgc cca aat gat ggg ttt ggt gtt tac tcc aat tcc tat ggg      545
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138                               143                               148                               153

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154                               159                               164                               169

ggg ttg gct tat gaa gac ttt agt ttc ccc atc ttt ctt ctt gaa gat      641
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tct caa aag cta gaa aat ata aaa atg gac ttg tca tac tca ttg gaa	1935
Ser Gln Lys Leu Glu Asn Ile Lys Met Asp Leu Ser Tyr Ser Leu Glu	
600 605 610 615	
agc att gaa gac cca aaa caa atg aag cag act ctg ttt gat gct gaa	1983
Ser Ile Glu Asp Pro Lys Gln Met Lys Gln Thr Leu Phe Asp Ala Glu	
616 621 626 631	
act gta gcc ctt gat gcc aag aga gaa tca gcc ttt ctt aga agt gaa	2031
Thr Val Ala Leu Asp Ala Lys Arg Glu Ser Ala Phe Leu Arg Ser Glu	
632 637 642 647	
aat ctg gag ttg aag gag aaa atg aaa gaa ctt gca act aca tac aag	2079
Asn Leu Glu Leu Lys Glu Lys Met Lys Glu Leu Ala Thr Thr Tyr Lys	
648 653 658 663	
caa atg gaa aat gat att cag tta tat caa agc caa ttg gag gca aaa	2127

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Lys Lys Met Gln Val Asp Leu Glu Lys Glu Leu Gln Ser Ala Phe Asn		
680	685 690 695	
gag ata aca aaa ctc acc tcc ctt ata gat ggc aaa gtt cca aaa gat		2223
Glu Ile Thr Lys Leu Thr Ser Leu Ile Asp Gly Lys Val Pro Lys Asp		
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Leu Leu Cys Asn Leu Glu Leu Glu Gly Lys Ile Thr Asp Leu Gln Lys		
712	717 722 727	
gaa cta aat aaa gaa gtt gaa gaa aat gaa gct ttg cgg gaa gaa gtc		2319
Glu Leu Asn Lys Glu Val Glu Glu Asn Glu Ala Leu Arg Glu Glu Val		
728	733 738 743	
att ttg ctt tca gaa ttg aaa tct tta cct tct gaa gta gaa agg ctg		2367
Ile Leu Leu Ser Glu Leu Lys Ser Leu Pro Ser Glu Val Glu Arg Leu		
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Arg Lys Glu Ile Gln Asp Lys Ser Glu Glu Leu His Ile Ile Thr Ser		
760	765 770 775	
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Glu Lys Asp Lys Leu Phe Ser Glu Val Val His Lys Glu Ser Arg Val		
776	781 786 791	
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Gln Gly Leu Leu Glu Glu Ile Gly Lys Thr Lys Asp Asp Leu Ala Thr		
792	797 802 807	
aca cag tcg aat tat aaa agc act gat caa gaa ttc caa aat ttc aaa		2559
Thr Gln Ser Asn Tyr Lys Ser Thr Asp Gln Glu Phe Gln Asn Phe Lys		
808	813 818 823	
acc ctt cat atg gac ttt gag caa aag tat aag atg gtc ctt gag gag		2607
Thr Leu His Met Asp Phe Glu Gln Lys Tyr Lys Met Val Leu Glu Glu		
824	829 834 839	
aat gag aga atg aat cag gaa ata gtt aat ctc tct aaa gaa gcc caa		2655
Asn Glu Arg Met Asn Gln Glu Ile Val Asn Leu Ser Lys Glu Ala Gln		
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Lys Phe Asp Ser Ser Leu Gly Ala Leu Lys Thr Glu Leu Ser Tyr Lys		
856	861 866 871	
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Thr Gln Glu Leu Gln Glu Lys Thr Arg Glu Val Gln Glu Arg Leu Asn		
872	877 882 887	
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Lys Leu Lys Glu Lys Ser Gln Gln Leu Gln Glu Lys Gln Gln Gln Leu	
1128 1133 1138 1143	
ctt aat gta caa gaa gag atg agt gag atg cag aaa aag att aat gaa	3567
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1144 1149 1154 1159	
ata gag aat tta aag aat gaa tta aag aac aaa gaa ttg aca ttg gaa	3615
Ile Glu Asn Leu Lys Asn Glu Leu Lys Asn Lys Glu Leu Thr Leu Glu	
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cat atg gaa aca gag agg ctt gag ttg gct cag aaa ctt aat gaa aat	3663
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Tyr Glu Glu Val Lys Ser Ile Thr Lys Glu Arg Lys Val Leu Lys Glu	
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Arg Glu Ile Glu Ala Thr Gly Leu Gln Thr Lys Glu Glu Leu Lys Ile	
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1272 1277 1282 1287	
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Gln Glu Lys Val Asn Glu Leu Lys Gln Phe Lys Glu His Arg Lys Ala	
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Asn Arg Leu Gln Glu Ser Gln Glu Glu Ile Gln Ile Met Ile Lys Glu	
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Thr Ile Asp Lys Leu Arg Gly Ile Val Ser Glu Lys Thr Asn Glu Ile	
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121 126 131 136

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185	190	195	200	
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Gln Thr Tyr Met Pro Ser Thr Leu Ile Thr Ile Leu Ser Trp Val Ser				
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Phe Trp Ile Asn Tyr Asp Ala Ser Ala Ala Arg Val Ala Leu Gly Ile				
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Cys Phe Val Phe Val Phe Leu Ala Leu Leu Glu Tyr Ala Phe Val Asn				
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Phe Pro Ile Thr Phe Ser Leu Phe Asn Val Val Tyr Trp Leu Tyr Tyr	
457 462 467 472	

gta cac tga ggtctgt tctaattgggtt ccatttagac tactttcctc ttctattggt	1559
Val His *	
473	

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atg tcc	
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cag gcc ccg gga gca cag ccg agc cca ccc acc gtg tac cac gaa cgg	224
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Gln	Ala	Pro	Gly	Ala	Gln	Pro	Ser	Pro	Pro	Thr	Val	Tyr	His	Glu	Arg	
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Gln	Arg	Leu	Glu	Leu	Cys	Ala	Val	His	Ala	Leu	Asn	Asn	Val	Leu	Gln	
19					24					29					34	
cag	cag	ctc	ttt	agc	cag	gag	gct	gcc	gat	gag	atc	tgc	aag	agg	ttg	320
Gln	Gln	Leu	Phe	Ser	Gln	Glu	Ala	Ala	Asp	Glu	Ile	Cys	Lys	Arg	Leu	
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gcc	cca	gac	tcc	cgg	ctg	aac	cct	cat	cgc	agc	ctc	ctg	ggc	acc	ggc	368
Ala	Pro	Asp	Ser	Arg	Leu	Asn	Pro	His	Arg	Ser	Leu	Leu	Gly	Thr	Gly	
51					56					61					66	
aac	tat	gat	gtc	aat	gtg	atc	atg	gcc	gct	ctg	cag	ggg	ctg	ggc	ctg	416
Asn	Tyr	Asp	Val	Asn	Val	Ile	Met	Ala	Ala	Leu	Gln	Gly	Leu	Gly	Leu	
67					72					77					82	
gcc	gcc	gtg	tgg	tgg	gac	agg	agg	agg	ccc	ctg	tcc	cag	ctg	gcc	ctg	464
Ala	Ala	Val	Trp	Trp	Asp	Arg	Arg	Arg	Pro	Leu	Ser	Gln	Leu	Ala	Leu	
83					88					93					98	
ccc	cag	gta	ctg	ggg	ctg	atc	ctg	aac	ctg	ccc	tgc	ccc	gtg	tgc	ctg	512
Pro	Gln	Val	Leu	Gly	Leu	Ile	Leu	Asn	Leu	Pro	Ser	Pro	Val	Ser	Leu	
99					104					109					114	
ggg	ctg	ctg	tca	ctg	cgc	ctg	cgc	cgg	cgg	cac	tgg	gtg	gcc	ctg	cgc	560
Gly	Leu	Leu	Ser	Leu	Pro	Leu	Arg	Arg	Arg	His	Trp	Val	Ala	Leu	Arg	
115					120					125					130	
cag	gtg	gac	ggt	gtc	tac	tac	aac	ctg	gac	tcc	aag	ctg	cgg	gcg	ccc	608
Gln	Val	Asp	Gly	Val	Tyr	Tyr	Asn	Leu	Asp	Ser	Lys	Leu	Arg	Ala	Pro	
131					136					141					146	
gag	gcc	ctg	ggg	gat	gag	gac	gga	gtc	agg	gcc	ttc	ctg	gcg	gct	gcg	656
Glu	Ala	Leu	Gly	Asp	Glu	Asp	Gly	Val	Arg	Ala	Phe	Leu	Ala	Ala	Ala	
147					152					157					162	
ctg	gcc	cag	ggc	ctg	tgc	gag	gtg	ctg	ctg	gta	gtg	acc	aag	gag	gtg	704
Leu	Ala	Gln	Gly	Leu	Cys	Glu	Val	Leu	Leu	Val	Val	Thr	Lys	Glu	Val	
163					168					173					178	
gag	gag	aag	ggc	agc	tgg	ctg	cgg	aca	gac	tga	ccatggct	gaccatcggc				755
Glu	Glu	Lys	Gly	Ser	Trp	Leu	Arg	Thr	Asp	*						
179					184					189						
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gccagcactt	catggaccct	ggggaggccc	cgccccctcc	ccacaccct	gctccccact											875
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gtcggggctg cagcggcggg agggagccca gtggaggcgc cctcccgaag cgccactgcc      240

catgctgacc acccagccct ccggctgctg atgtc   atg agt aac acc act gtg      293
                               Met Ser Asn Thr Thr Val
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ccc aat gcc ccc cag gcc aac agc gac tcc atg gtg ggc tat gtg ttg      341
Pro Asn Ala Pro Gln Ala Asn Ser Asp Ser Met Val Gly Tyr Val Leu
   7                12                17                22

ggg ccc ttc ttc ctc atc acc ctg gtc ggg gtg gtg gtg gct gtg gta      389
Gly Pro Phe Phe Leu Ile Thr Leu Val Gly Val Val Val Ala Val Val
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atg tat gta cag aaa aaa aag cgg gtg gac cgg ctg cgc cat cac ctg      437
Met Tyr Val Gln Lys Lys Lys Arg Val Asp Arg Leu Arg His His Leu
  39                44                49                54

ctc ccc atg tac agc tat gac cca gct gag gaa ctg cat gag gct gag      485
Leu Pro Met Tyr Ser Tyr Asp Pro Ala Glu Glu Leu His Glu Ala Glu
  55                60                65                70

cag gag ctg ctc tct gac atg gga gac ccc aag gtg gta cat ggc tgg      533
Gln Glu Leu Leu Ser Asp Met Gly Asp Pro Lys Val Val His Gly Trp
  71                76                81                86

cag agt ggc tac cag cac aag cgg atg cca ctg ctg gat gtc aag acg      581
Gln Ser Gly Tyr Gln His Lys Arg Met Pro Leu Leu Asp Val Lys Thr
  87                92                97                102

tga cctg acccccttgc cccacccttc agagcctggg gtcctggact gcctggggcc      638
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103

ctgccatttg cttcccttgc tgtcacctgg ctcccccctgc tgggtgctgg gtttccattt      698

ttccctccac ccaccctcaa cagcatttgc tttccatgcc ctcaccatca cctcactgcc      758

cccaggcctt ttgccctttg tgggtgttga gctccccgcc cccccccagg cactcatagg      818

aaaaggcttt ccttttggga tggcggcggc tggtaaacc ctttgctttt tctagccctc      878

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Met Ser Thr Asp Asp Gln Gln Lys Ile Gln
1 5
gca gct gca ttt gac aaa ggt gat gat cga aga ctt ggc aaa aag cct 158
Ala Ala Ala Phe Asp Lys Gly Asp Asp Arg Arg Leu Gly Lys Lys Pro
11 16 21 26
ata ttc agt agc tcg cag caa agg aaa caa gtt tct gac tct ggt gat 206
Ile Phe Ser Ser Ser Gln Gln Arg Lys Gln Val Ser Asp Ser Gly Asp
27 32 37 42
ata aaa atc aaa tct tgg agg gga aat aac aag aaa gag tgt tgg agt 254
Ile Lys Ile Lys Ser Trp Arg Gly Asn Asn Lys Lys Glu Cys Trp Ser
43 48 53 58
tat ctc tct act aat aaa aag atg aaa tct gat gga tta gga gca tct 302
Tyr Leu Ser Thr Asn Lys Lys Met Lys Ser Asp Gly Leu Gly Ala Ser
59 64 69 74
gga cat tcg tca agt acc aat aga aat agt ata aat aaa act ctg aag 350
Gly His Ser Ser Ser Thr Asn Arg Asn Ser Ile Asn Lys Thr Leu Lys
75 80 85 90
caa gat gat gta aag gaa aaa gat ggt aca aaa ata gca tct aag att 398
Gln Asp Asp Val Lys Glu Lys Asp Gly Thr Lys Ile Ala Ser Lys Ile
91 96 101 106
aca aaa gaa cta aaa act ggg gga aaa aat gtt tct gga aag ccc aaa 446
Thr Lys Glu Leu Lys Thr Gly Gly Lys Asn Val Ser Gly Lys Pro Lys
107 112 117 122
act gta aca aaa tcc aaa aca gaa aat ggt gat aag gca cgg ttg gaa 494
Thr Val Thr Lys Ser Lys Thr Glu Asn Gly Asp Lys Ala Arg Leu Glu
123 128 133 138

aac atg tca cct aga caa gtt gta gaa aga tca gca aca gca gca gca	542
Asn Met Ser Pro Arg Gln Val Val Glu Arg Ser Ala Thr Ala Ala Ala	
139 144 149 154	
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Ala Ala Thr Gly Gln Lys Asn Leu Leu Asn Gly Lys Gly Val Arg Asn	
155 160 165 170	
cag gaa ggg caa att tca ggt gcc aga ccc aag gta ctc aca gga aac	638
Gln Glu Gly Gln Ile Ser Gly Ala Arg Pro Lys Val Leu Thr Gly Asn	
171 176 181 186	
tta aat gtg caa gcc aaa gca aag cct ttg aag aaa gct aca ggg aag	686
Leu Asn Val Gln Ala Lys Ala Lys Pro Leu Lys Lys Ala Thr Gly Lys	
187 192 197 202	
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Asp Ser Pro Cys Leu Ser Ile Ala Gly Pro Ser Ser Arg Ser Thr Asp	
203 208 213 218	
tca agt atg gaa ttc tca att tcc act gaa tgt ctg gat gaa ccg aaa	782
Ser Ser Met Glu Phe Ser Ile Ser Thr Glu Cys Leu Asp Glu Pro Lys	
219 224 229 234	
gaa aat gga tca aca gaa gaa gaa aag cct tct gga cat aaa cta tcc	830
Glu Asn Gly Ser Thr Glu Glu Glu Lys Pro Ser Gly His Lys Leu Ser	
235 240 245 250	
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Phe Cys Asp Ser Pro Gly Gln Met Met Lys Asn Ser Val Asp Ser Val	
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Lys Asn Ser Thr Val Ala Ile Lys Ser Arg Pro Val Ser Arg Val Thr	
267 272 277 282	
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Asn Gly Thr Ser Asn Lys Lys Ser Ile His Glu Gln Asp Thr Asn Val	
283 288 293 298	
aat aac agt gta cta aag aaa gtc agt ggc aaa gga tgt agt gag cca	1022
Asn Asn Ser Val Leu Lys Lys Val Ser Gly Lys Gly Cys Ser Glu Pro	
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gta cca cag gca att ttg aag aaa aga gga act agc aat gga tgt act	1070
Val Pro Gln Ala Ile Leu Lys Lys Arg Gly Thr Ser Asn Gly Cys Thr	
315 320 325 330	
gca gct cag cag agg aca aag agt acc cca tct aat ctt act aaa act	1118
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331 336 341 346	
caa gga tcc caa gga gag tca cca aac tca gta aaa tct tca gtc tct	1166
Gln Gly Ser Gln Gly Glu Ser Pro Asn Ser Val Lys Ser Ser Val Ser	
347 352 357 362	
tca agg cag tct gat gaa aat gtg gca aag ttg gac cac aat aca act	1214

Ser	Arg	Gln	Ser	Asp	Glu	Asn	Val	Ala	Lys	Leu	Asp	His	Asn	Thr	Thr	
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Thr	Glu	Lys	Gln	Ala	Pro	Lys	Arg	Lys	Met	Val	Lys	Gln	Val	His	Thr	
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gct	ttg	cct	aag	gtt	aat	gca	aaa	ata	gtg	gca	atg	cct	aaa	aat	cta	1310
Ala	Leu	Pro	Lys	Val	Asn	Ala	Lys	Ile	Val	Ala	Met	Pro	Lys	Asn	Leu	
395					400					405					410	
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Asn	Gln	Ser	Lys	Lys	Gly	Glu	Thr	Leu	Asn	Asn	Lys	Asp	Ser	Lys	Gln	
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Lys	Met	Pro	Pro	Gly	Gln	Val	Ile	Ser	Lys	Thr	Gln	Pro	Ser	Ser	Gln	
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aga	cct	tta	aaa	cat	gaa	aca	tct	act	gtc	caa	aaa	agt	atg	ttt	cat	1454
Arg	Pro	Leu	Lys	His	Glu	Thr	Ser	Thr	Val	Gln	Lys	Ser	Met	Phe	His	
443					448					453					458	
gat	gtg	cgt	gat	aat	aac	aac	aag	gac	agt	gtt	tct	gaa	cag	aag	cct	1502
Asp	Val	Arg	Asp	Asn	Asn	Asn	Lys	Asp	Ser	Val	Ser	Glu	Gln	Lys	Pro	
459					464					469					474	
cac	aaa	cct	ctc	att	aat	ctt	gca	tct	gaa	ata	agt	gat	gca	gaa	gca	1550
His	Lys	Pro	Leu	Ile	Asn	Leu	Ala	Ser	Glu	Ile	Ser	Asp	Ala	Glu	Ala	
475					480					485					490	
ctc	cag	tca	tcc	tgc	agg	cct	gac	cca	caa	aag	cca	tta	aac	gat	caa	1598
Leu	Gln	Ser	Ser	Cys	Arg	Pro	Asp	Pro	Gln	Lys	Pro	Leu	Asn	Asp	Gln	
491					496					501					506	
gaa	aaa	gag	aag	ttg	gcg	tta	gaa	tgc	caa	aat	att	tca	aag	ctg	gat	1646
Glu	Lys	Glu	Lys	Leu	Ala	Leu	Glu	Cys	Gln	Asn	Ile	Ser	Lys	Leu	Asp	
507					512					517					522	
aaa	tca	tta	aaa	cac	gaa	ctg	gaa	tca	aaa	cag	att	tgt	tta	gat	aaa	1694
Lys	Ser	Leu	Lys	His	Glu	Leu	Glu	Ser	Lys	Gln	Ile	Cys	Leu	Asp	Lys	
523					528					533					538	
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Ser	Glu	Thr	Lys	Phe	Pro	Asn	His	Lys	Glu	Thr	Asp	Asp	Cys	Asp	Ala	
539					544					549					554	
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Ala	Asn	Ile	Cys	Cys	His	Ser	Val	Gly	Ser	Asp	Asn	Val	Asn	Ser	Lys	
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Phe	Tyr	Ser	Thr	Thr	Ala	Leu	Lys	Tyr	Met	Val	Ser	Asn	Pro	Asn	Glu	
571					576					581					586	
aac	tcc	ttg	aac	tct	aat	cca	gtt	tgt	gat	tta	gac	tca	aca	agt	gca	1886
Asn	Ser	Leu	Asn	Ser	Asn	Pro	Val	Cys	Asp	Leu	Asp	Ser	Thr	Ser	Ala	

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Gly Gln Ile His Leu Ile Ser Asp Arg Glu Asn Gln Val Gly Arg Lys				
603	608	613	618	
gat aca aac aaa caa tca agt att aaa tgt gtg gaa gat gtt tca ctg				1982
Asp Thr Asn Lys Gln Ser Ser Ile Lys Cys Val Glu Asp Val Ser Leu				
619	624	629	634	
tgt aat cct gaa agg aca aat ggt acc tta aat tct gct caa gaa gac				2030
Cys Asn Pro Glu Arg Thr Asn Gly Thr Leu Asn Ser Ala Gln Glu Asp				
635	640	645	650	
aaa aaa tcg aaa gtt cct gtg gaa gga ctg aca att cct agt aag ttg				2078
Lys Lys Ser Lys Val Pro Val Glu Gly Leu Thr Ile Pro Ser Lys Leu				
651	656	661	666	
tca gat gaa tct gct atg gat gaa gac aaa cat gct aca gca gac tca				2126
Ser Asp Glu Ser Ala Met Asp Glu Asp Lys His Ala Thr Ala Asp Ser				
667	672	677	682	
gat gta tct tcc aag tgt ttt tcg gga cag cta tca gaa aaa aat tct				2174
Asp Val Ser Ser Lys Cys Phe Ser Gly Gln Leu Ser Glu Lys Asn Ser				
683	688	693	698	
cct aaa aat atg gaa aca tca gaa tct cca gag agc cat gaa act cca				2222
Pro Lys Asn Met Glu Thr Ser Glu Ser Pro Glu Ser His Glu Thr Pro				
699	704	709	714	
gaa act cca ttt gtg ggt cac tgg aat ttg agt act ggt gtt ctg cat				2270
Glu Thr Pro Phe Val Gly His Trp Asn Leu Ser Thr Gly Val Leu His				
715	720	725	730	
cag cga gag agt cct gaa tct gac act ggc agt gct acc acc tcc tcc				2318
Gln Arg Glu Ser Pro Glu Ser Asp Thr Gly Ser Ala Thr Thr Ser Ser				
731	736	741	746	
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Asp Asp Ile Lys Pro Arg Ser Glu Asp Tyr Asp Ala Gly Gly Ser Gln				
747	752	757	762	
gat gat gat ggg tca aat gac aga ggt atc tct aaa tgt ggc act atg				2414
Asp Asp Asp Gly Ser Asn Asp Arg Gly Ile Ser Lys Cys Gly Thr Met				
763	768	773	778	
ctg tgc cat gat ttt ctt gga aga agt agc agt gat acc agt act cct				2462
Leu Cys His Asp Phe Leu Gly Arg Ser Ser Ser Asp Thr Ser Thr Pro				
779	784	789	794	
gaa gaa tta aaa att tat gat agt aat tta aga att gaa gta aaa atg				2510
Glu Glu Leu Lys Ile Tyr Asp Ser Asn Leu Arg Ile Glu Val Lys Met				
795	800	805	810	
aaa aag caa agt agt aat gat ctt ttc caa gtt aat tca acg agt gat				2558
Lys Lys Gln Ser Ser Asn Asp Leu Phe Gln Val Asn Ser Thr Ser Asp				
811	816	821	826	

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Asp Glu Ile Pro Arg Lys Arg Pro Glu Ile Trp Ser Arg Ser Ala Ile	
827 832 837 842	
ggt cac tct agg gaa aga gaa aat att cca cga ggc agt gtc cag ttt	2654
Val His Ser Arg Glu Arg Glu Asn Ile Pro Arg Gly Ser Val Gln Phe	
843 848 853 858	
gct cag gaa ata gat cag gta tct tct tca gca gat gaa aca gaa gat	2702
Ala Gln Glu Ile Asp Gln Val Ser Ser Ser Ala Asp Glu Thr Glu Asp	
859 864 869 874	
gaa aga tct gaa gct gaa aac gtt gca gaa aat ttc tct ata tct aac	2750
Glu Arg Ser Glu Ala Glu Asn Val Ala Glu Asn Phe Ser Ile Ser Asn	
875 880 885 890	
cca gct cct cag cag ttt cag gga ata att aat tta gct ttt gaa gat	2798
Pro Ala Pro Gln Gln Phe Gln Gly Ile Ile Asn Leu Ala Phe Glu Asp	
891 896 901 906	
gca act gaa aat gaa tgt cgt gaa ttt tct gca aat aaa aag ttt aaa	2846
Ala Thr Glu Asn Glu Cys Arg Glu Phe Ser Ala Asn Lys Lys Phe Lys	
907 912 917 922	
agg tca gtt tta ctt tca gtc gat gaa tgt gaa gag ctg gga tca gat	2894
Arg Ser Val Leu Leu Ser Val Asp Glu Cys Glu Glu Leu Gly Ser Asp	
923 928 933 938	
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Glu Gly Glu Val His Thr Pro Phe Gln Ala Ser Val Asp Ser Phe Ser	
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Pro Ser Asp Val Phe Asp Gly Ile Ser His Glu His His Gly Arg Thr	
955 960 965 970	
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Cys Tyr Ser Arg Phe Ser Arg Glu Ser Glu Asp Asn Ile Leu Glu Cys	
971 976 981 986	
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Lys Gln Asn Lys Gly Asn Ser Val Cys Lys Asn Glu Ser Thr Val Leu	
987 992 997 1002	
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Asp Leu Ser Ser Ile Asp Ser Ser Arg Lys Asn Lys Gln Ser Val Ser	
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gcc aca gaa aaa aag aac aca ata gac gtc cta tcc agt aga agc aga	3182
Ala Thr Glu Lys Lys Asn Thr Ile Asp Val Leu Ser Ser Arg Ser Arg	
1019 1024 1029 1034	
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1067 1072 1077 1082	
gac ata cca aag aac agc tct aca aaa tct cta gac tcc ttt cgg agt	3374
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Asp Thr Leu Ala Gln Thr Arg Met Tyr Asp His Arg Pro Ser Lys Thr	
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His Phe Ala Lys Gln Asp Trp Thr Leu Leu Lys Gln Leu Leu Ser Glu	
1179 1184 1189 1194	
cag gat tca aac tta gat gtt aca aat tcc gtt cct gaa gac tta agt	3710
Gln Asp Ser Asn Leu Asp Val Thr Asn Ser Val Pro Glu Asp Leu Ser	
1195 1200 1205 1210	
tta gca cag tat cta atc aat cag aca cta ctt tta gca cga gat agc	3758
Leu Ala Gln Tyr Leu Ile Asn Gln Thr Leu Leu Leu Ala Arg Asp Ser	
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tca aaa cct cag ggt ata aca cat att gac act ttg aac aga tgg agt	3806
Ser Lys Pro Gln Gly Ile Thr His Ile Asp Thr Leu Asn Arg Trp Ser	
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Glu Leu Thr Ser Pro Leu Asp Ser Ser Ala Ser Ile Thr Met Ala Ser	
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Phe Ser Ser Glu Asp Cys Ser Pro Gln Gly Glu Trp Thr Ile Leu Glu	
1259 1264 1269 1274	
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Leu Glu Thr Gln His *
1275 1280

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gttttgatga tggagggcta ctacagaccg agacaacact tggactcagt tcatatcagc 180
agaaaagtat atctctctac cgggggaatt gcaggcccat acgatttgag ccacca 236
atg ctg gat ttc cat gaa caa cca gtt gga atg cca aaa atg gaa aaa 284
Met Leu Asp Phe His Glu Gln Pro Val Gly Met Pro Lys Met Glu Lys
1 5 10 15
gtc tac tta cat aat cct agt tct gaa gaa acg att act tta gta tca 332
Val Tyr Leu His Asn Pro Ser Ser Glu Glu Thr Ile Thr Leu Val Ser
17 22 27 32
ata tct gct aca aca tca cat ttt cat gca tca ttt ttt caa aat agg 380
Ile Ser Ala Thr Thr Ser His Phe His Ala Ser Phe Phe Gln Asn Arg
33 38 43 48
aaa att ctt cca gga gga aat aca tca ttt gat gta gtt ttt ctt gca 428
Lys Ile Leu Pro Gly Gly Asn Thr Ser Phe Asp Val Val Phe Leu Ala
49 54 59 64
aga gta gta gga aat gta gaa aat act tta ttt att aat aca tct aat 476
Arg Val Val Gly Asn Val Glu Asn Thr Leu Phe Ile Asn Thr Ser Asn
65 70 75 80

cat ggg gta ttt act tac cag gta ttt ggt gtt gga gtt cca aat cca	524
His Gly Val Phe Thr Tyr Gln Val Phe Gly Val Gly Val Pro Asn Pro	
81 86 91 96	
tat cga ttg agg ccg ttc ctt ggg gcc aga gtc cct gtg aat agc agt	572
Tyr Arg Leu Arg Pro Phe Leu Gly Ala Arg Val Pro Val Asn Ser Ser	
97 102 107 112	
ttc tca cct ata ata aac atc cac aat cct cac agt gag cct tta cag	620
Phe Ser Pro Ile Ile Asn Ile His Asn Pro His Ser Glu Pro Leu Gln	
113 118 123 128	
gtt gta gaa atg tac tct agt gga gga gac ctt cac cta gaa ctg cca	668
Val Val Glu Met Tyr Ser Ser Gly Gly Asp Leu His Leu Glu Leu Pro	
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Thr Gly Gln Gln Gly Gly Thr Arg Lys Leu Trp Glu Ile Pro Pro Tyr	
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Glu Thr Lys Gly Val Met Arg Ala Ser Phe Ser Ser Arg Glu Ala Asp	
161 166 171 176	
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Asn His Thr Ala Phe Ile Arg Ile Lys Thr Asn Ala Ser Asp Ser Thr	
177 182 187 192	
gag ttt atc att ctt cct gtt gag gtt gaa gtt aca aca gct cct gga	860
Glu Phe Ile Ile Leu Pro Val Glu Val Glu Val Thr Thr Ala Pro Gly	
193 198 203 208	
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Ile Tyr Ser Ser Thr Glu Met Leu Asp Phe Gly Thr Leu Arg Thr Gln	
209 214 219 224	
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Asp Leu Pro Lys Val Leu Asn Leu His Leu Leu Asn Ser Gly Thr Lys	
225 230 235 240	
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Asp Val Pro Ile Thr Ser Val Arg Pro Thr Pro Gln Asn Asp Ala Ile	
241 246 251 256	
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Thr Val His Phe Lys Pro Ile Thr Leu Lys Ala Ser Glu Ser Lys Tyr	
257 262 267 272	
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Thr Lys Val Ala Ser Ile Ser Phe Asp Ala Ser Lys Ala Lys Lys Pro	
273 278 283 288	
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Ser Gln Phe Ser Gly Lys Ile Thr Val Lys Ala Lys Glu Lys Ser Tyr	
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Gly	Phe	Asp	His	Ala	Ala	Thr	Leu	Phe	His	Ile	Arg	Asp	Ser	Pro	Ala	
321					326					331					336	
gat	cct	gtg	gaa	agg	cca	att	tac	ctt	act	aac	act	ttc	agt	ttt	gcg	1292
Asp	Pro	Val	Glu	Arg	Pro	Ile	Tyr	Leu	Thr	Asn	Thr	Phe	Ser	Phe	Ala	
337					342					347					352	
atc	ctc	att	cac	gat	gtg	ttg	cta	cca	gaa	gaa	gcc	aaa	aca	atg	ttt	1340
Ile	Leu	Ile	His	Asp	Val	Leu	Leu	Pro	Glu	Glu	Ala	Lys	Thr	Met	Phe	
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aaa	gtt	cac	aac	ttc	agc	aaa	cca	gtc	tta	att	ctt	cct	aat	gaa	tca	1388
Lys	Val	His	Asn	Phe	Ser	Lys	Pro	Val	Leu	Ile	Leu	Pro	Asn	Glu	Ser	
369					374					379					384	
gga	tac	att	ttt	acc	ctg	ctt	ttt	atg	cct	tcc	aca	tca	tcc	atg	cac	1436
Gly	Tyr	Ile	Phe	Thr	Leu	Leu	Phe	Met	Pro	Ser	Thr	Ser	Ser	Met	His	
385					390					395					400	
att	gat	aac	aac	att	tta	ctt	att	acc	aat	gct	tct	aaa	ttt	cat	tta	1484
Ile	Asp	Asn	Asn	Ile	Leu	Leu	Ile	Thr	Asn	Ala	Ser	Lys	Phe	His	Leu	
401					406					411					416	
ccc	gtg	cgg	gta	tac	aca	ggc	ttt	tta	gat	tac	ttt	gta	ttg	ccc	ccc	1532
Pro	Val	Arg	Val	Tyr	Thr	Gly	Phe	Leu	Asp	Tyr	Phe	Val	Leu	Pro	Pro	
417					422					427					432	
aaa	ata	gag	gaa	cgt	ttc	ata	gat	ttt	gga	gta	ctg	agt	gct	aca	gaa	1580
Lys	Ile	Glu	Glu	Arg	Phe	Ile	Asp	Phe	Gly	Val	Leu	Ser	Ala	Thr	Glu	
433					438					443					448	
gca	agt	aat	att	tta	ttt	gca	att	ata	aac	agc	aat	cca	att	gag	ttg	1628
Ala	Ser	Asn	Ile	Leu	Phe	Ala	Ile	Ile	Asn	Ser	Asn	Pro	Ile	Glu	Leu	
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gct	ata	aaa	agt	tgg	cat	atc	ata	gga	gac	ggc	tta	tca	ata	gaa	ctt	1676
Ala	Ile	Lys	Ser	Trp	His	Ile	Ile	Gly	Asp	Gly	Leu	Ser	Ile	Glu	Leu	
465					470					475					480	
gta	gct	gtg	gaa	aga	ggc	aat	aga	act	aca	ata	att	tca	agc	ctg	cca	1724
Val	Ala	Val	Glu	Arg	Gly	Asn	Arg	Thr	Thr	Ile	Ile	Ser	Ser	Leu	Pro	
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Glu	Phe	Glu	Lys	Ser	Ser	Leu	Ser	Asp	Gln	Ser	Ser	Val	Thr	Leu	Ala	
497					502					507					512	
tca	ggc	tat	ttt	gca	gtc	ttc	aga	gtc	aaa	ctt	act	gca	aaa	aaa	tta	1820
Ser	Gly	Tyr	Phe	Ala	Val	Phe	Arg	Val	Lys	Leu	Thr	Ala	Lys	Lys	Leu	
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gag	ggg	att	cat	gat	gga	gcc	atc	cag	atc	aca	aca	gac	tat	gag	atc	1868
Glu	Gly	Ile	His	Asp	Gly	Ala	Ile	Gln	Ile	Thr	Thr	Asp	Tyr	Glu	Ile	

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ctg aca atc cct gtg aag gct gtg att gca gta ggc tca ctg acc tgc				1916
Leu Thr Ile Pro Val Lys Ala Val Ile Ala Val Gly Ser Leu Thr Cys				
545	550	555	560	
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Phe Pro Lys His Val Val Leu Pro Pro Ser Phe Pro Gly Lys Ile Val				
561	566	571	576	
cat caa agt tta aat att atg aat tcc ttc tca cag aag gta aaa ata				2012
His Gln Ser Leu Asn Ile Met Asn Ser Phe Ser Gln Lys Val Lys Ile				
577	582	587	592	
cag caa ata cga tct ttg tca gaa gat gtg cga ttt tac tat aaa cga				2060
Gln Gln Ile Arg Ser Leu Ser Glu Asp Val Arg Phe Tyr Tyr Lys Arg				
593	598	603	608	
tta cgg ggc aat aag gaa gac ttg gag cca gga aaa aaa tca aag att				2108
Leu Arg Gly Asn Lys Glu Asp Leu Glu Pro Gly Lys Lys Ser Lys Ile				
609	614	619	624	
gca aac att tat ttt gat cct gga cta cag tgt ggg gat cat tgc tat				2156
Ala Asn Ile Tyr Phe Asp Pro Gly Leu Gln Cys Gly Asp His Cys Tyr				
625	630	635	640	
gtt ggc ttg cct ttt cta tcc aaa tct gaa ccc aaa gtg cag cct ggt				2204
Val Gly Leu Pro Phe Leu Ser Lys Ser Glu Pro Lys Val Gln Pro Gly				
641	646	651	656	
gta gcc atg cag gaa gat atg tgg gat gct gac tgg gat ttg cat caa				2252
Val Ala Met Gln Glu Asp Met Trp Asp Ala Asp Trp Asp Leu His Gln				
657	662	667	672	
agc ctg ttc aag gga tgg aca gga ata aag gaa aat tca ggt cat aga				2300
Ser Leu Phe Lys Gly Trp Thr Gly Ile Lys Glu Asn Ser Gly His Arg				
673	678	683	688	
ttg agt gct ata ttt gaa gta aat aca gac ctt caa aaa aat ata ata				2348
Leu Ser Ala Ile Phe Glu Val Asn Thr Asp Leu Gln Lys Asn Ile Ile				
689	694	699	704	
tca aaa atc act gct gag ctc tcc tgg cct tcc ata ctt agc tca ccc				2396
Ser Lys Ile Thr Ala Glu Leu Ser Trp Pro Ser Ile Leu Ser Ser Pro				
705	710	715	720	
cgg cac ttg aaa ttt cca ctt act aat aca aac tgc tcc tca gaa gaa				2444
Arg His Leu Lys Phe Pro Leu Thr Asn Thr Asn Cys Ser Ser Glu Glu				
721	726	731	736	
gag att act tta gaa aat cct gca gat gtt cct gtc tat gtt cag ttt				2492
Glu Ile Thr Leu Glu Asn Pro Ala Asp Val Pro Val Tyr Val Gln Phe				
737	742	747	752	
att cct ctg got tta tat tcc aac cct tca gtg ttt gta gat aag tta				2540
Ile Pro Leu Ala Leu Tyr Ser Asn Pro Ser Val Phe Val Asp Lys Leu				
753	758	763	768	

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Val Ser Arg Phe Asn Leu Ser Lys Val Ala Lys Ile Asp Leu Arg Thr	
769 774 779 784	
cta gaa ttt caa gtc ttc aga aac agt gct cat cca ctg cag agt tca	2636
Leu Glu Phe Gln Val Phe Arg Asn Ser Ala His Pro Leu Gln Ser Ser	
785 790 795 800	
aca gga ttt atg gag ggc ctc tct cga cat tta att tta aac cta att	2684
Thr Gly Phe Met Glu Gly Leu Ser Arg His Leu Ile Leu Asn Leu Ile	
801 806 811 816	
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Leu Lys Pro Gly Glu Lys Lys Ser Val Lys Val Lys Phe Thr Pro Val	
817 822 827 832	
cac aac aga act gtt tct tca ctt atc ata gtc aga aat aac ctg act	2780
His Asn Arg Thr Val Ser Ser Leu Ile Ile Val Arg Asn Asn Leu Thr	
833 838 843 848	
gtg atg gat gct gtg atg gtc caa gga caa gga aca act gag aac ttg	2828
Val Met Asp Ala Val Met Val Gln Gly Gln Gly Thr Thr Glu Asn Leu	
849 854 859 864	
agg gtg gca ggc aag ctt cca ggt cca gga agc tcc tta cgc ttt aaa	2876
Arg Val Ala Gly Lys Leu Pro Gly Pro Gly Ser Ser Leu Arg Phe Lys	
865 870 875 880	
atc acg gaa gca ttg tta aaa gat tgt aca gat agt tta aaa cta aga	2924
Ile Thr Glu Ala Leu Leu Lys Asp Cys Thr Asp Ser Leu Lys Leu Arg	
881 886 891 896	
gaa cca aat ttc aca ttg aaa aga aca ttt aag gta gag aat aca gga	2972
Glu Pro Asn Phe Thr Leu Lys Arg Thr Phe Lys Val Glu Asn Thr Gly	
897 902 907 912	
caa ctt caa att cac ata gaa acc att gaa atc agt gga tac tca tgt	3020
Gln Leu Gln Ile His Ile Glu Thr Ile Glu Ile Ser Gly Tyr Ser Cys	
913 918 923 928	
gaa gga tat ggc ttt aaa gtt gtt aat tgt caa gag ttt act cta agt	3068
Glu Gly Tyr Gly Phe Lys Val Val Asn Cys Gln Glu Phe Thr Leu Ser	
929 934 939 944	
gcc aat gct tct aga gat ata atc ata ttg ttt act cct gat ttt aca	3116
Ala Asn Ala Ser Arg Asp Ile Ile Ile Leu Phe Thr Pro Asp Phe Thr	
945 950 955 960	
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Ala Ser Arg Val Ile Arg Glu Leu Lys Phe Ile Thr Thr Ser Gly Ser	
961 966 971 976	
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Glu Phe Val Phe Ile Leu Asn Ala Ser Leu Pro Tyr His Met Leu Ala	
977 982 987 992	

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Thr Cys Ala Glu Ala Leu Pro Arg Pro Asn Trp Glu Leu Ala Leu Tyr	
993 998 1003 1008	
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Ile Ile Ile Ser Gly Ile Met Ser Ala Leu Phe Leu Leu Val Ile Gly	
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Thr Ala Tyr Leu Glu Ala Gln Gly Ile Trp Glu Pro Phe Arg Arg Arg	
1025 1030 1035 1040	
cta tcc ttt gag gcc tcg aac ccg ccc ttc gat gtg gga agg cca ttt	3404
Leu Ser Phe Glu Ala Ser Asn Pro Pro Phe Asp Val Gly Arg Pro Phe	
1041 1046 1051 1056	
gat ctc agg aga atc gtt ggt att tca tct gaa gga aac ttg aac aca	3452
Asp Leu Arg Arg Ile Val Gly Ile Ser Ser Glu Gly Asn Leu Asn Thr	
1057 1062 1067 1072	
ctc agc tgt gac ccc ggt cac agt agg ggg ttc tgt gga gca ggc ggt	3500
Leu Ser Cys Asp Pro Gly His Ser Arg Gly Phe Cys Gly Ala Gly Gly	
1073 1078 1083 1088	
tca tca tcc cga ccc agt gcc ggg agt cat aag cag tgt ggc cca tcg	3548
Ser Ser Ser Arg Pro Ser Ala Gly Ser His Lys Gln Cys Gly Pro Ser	
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Val His Pro His Ser Ser His Ser Asn Arg Asn Ser Ala Asp Val Glu	
1105 1110 1115 1120	
aac gtc aga gcc aaa aac agt tca agt acc tct agt agg act tct gct	3644
Asn Val Arg Ala Lys Asn Ser Ser Ser Thr Ser Ser Arg Thr Ser Ala	
1121 1126 1131 1136	
caa gca gct tct tca cag tct gct aac aaa aca agc ccc ctt gtc tta	3692
Gln Ala Ala Ser Ser Gln Ser Ala Asn Lys Thr Ser Pro Leu Val Leu	
1137 1142 1147 1152	
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Asp Ser Asn Thr Val Thr Gln Gly His Thr Ala Gly Arg Lys Ser Lys	
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Gly Ala Lys Gln Ser Gln His Gly Ser Gln His His Ala His Ser Pro	
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Gln Glu Pro Gln Pro Glu Arg Leu Ser Pro Ala Pro Leu Ala His Pro	
1201 1206 1211 1216	
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Ser His Pro Glu Arg Ala Ser Ser Ala Arg His Ser Ser Glu Asp Ser	
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Asp Ile Thr Ser Leu Ile Glu Ala Met Asp Lys Asp Phe Asp His His	
1233 1238 1243 1248	
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Asp Ser Pro Ala Leu Glu Val Phe Thr Glu Gln Pro Pro Ser Pro Leu	
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cca aaa agc aaa ggg aaa gga aaa cct ctt cag cgc aag gtg aaa cca	4076
Pro Lys Ser Lys Gly Lys Gly Lys Pro Leu Gln Arg Lys Val Lys Pro	
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Glu Asp Glu Leu Lys Asp Ser Leu Ala Asp Asp Asp Ser Ser Ser Thr	
1297 1302 1307 1312	
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1313 1318 1323 1328	
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Thr Glu Lys Gln Lys Gly Lys Gln Ala Met Pro Glu Lys His Glu Ser	
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Lys Glu Ile Pro Thr Asp Val Lys Pro Ser Ser Leu Glu Leu Pro Tyr	
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Thr Pro Pro Leu Glu Ser Lys Gln Arg Arg Asn Leu Pro Ser Lys Ile	
1377 1382 1387 1392	
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Pro Leu Pro Thr Ala Met Thr Ser Gly Ser Lys Ser Arg Asn Ala Gln	
1393 1398 1403 1408	
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Lys Thr Lys Gly Thr Ser Lys Leu Val Asp Asn Arg Pro Pro Ala Leu	
1409 1414 1419 1424	
gca aaa ttc ctc ccg aat agt caa gaa tta ggc aac acc agt agc tca	4556
Ala Lys Phe Leu Pro Asn Ser Gln Glu Leu Gly Asn Thr Ser Ser Ser	
1425 1430 1435 1440	
gag ggt gaa aaa gac tct cct cca ccg gag tgg gat tcc gtt cca gtt	4604
Glu Gly Glu Lys Asp Ser Pro Pro Pro Glu Trp Asp Ser Val Pro Val	

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His Lys Pro Gly Ser Ser Thr Asp Ser Leu Tyr Lys Leu Ser Leu Gln				
1457	1462	1467	1472	
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Thr Leu Asn Ala Asp Ile Phe Leu Lys Gln Arg Gln Thr Ser Pro Thr				
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Pro Ala Ser Pro Ser Pro Pro Ala Ala Pro Cys Pro Phe Val Val Arg				
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Gly Ser Tyr Ser Ser Ile Val Asn Ser Ser Ser Ser Ser Asp Pro Lys				
1505	1510	1515	1520	
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Ile Lys Gln Pro Asn Gly Ser Lys His Lys Leu Thr Lys Ala Ala Ser				
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Leu Pro Gly Lys Asn Gly Asn Pro Thr Phe Ala Ala Val Thr Ala Gly				
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Tyr Asp Lys Ser Pro Gly Gly Asn Gly Phe Ala Lys Val Ser Ser Asn				
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aaa aca ggt ttc tcc agc agc ctt ggc att tca cac gct cct gtt gac				4988
Lys Thr Gly Phe Ser Ser Ser Leu Gly Ile Ser His Ala Pro Val Asp				
1569	1574	1579	1584	
agc gat ggc tca gac agc tcg ggt ttg tgg agt ccc gtc agc aac cca				5036
Ser Asp Gly Ser Asp Ser Ser Gly Leu Trp Ser Pro Val Ser Asn Pro				
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Ser Ser Pro Asp Phe Thr Pro Leu Asn Ser Phe Ser Ala Phe Gly Asn				
1601	1606	1611	1616	
tct ttt aat cta act ggt gaa gtt ttc agc aaa ctc gga tta tct cga				5132
Ser Phe Asn Leu Thr Gly Glu Val Phe Ser Lys Leu Gly Leu Ser Arg				
1617	1622	1627	1632	
tcg tgc aat cag gcc tca cag agg agc tgg aac gag ttt aat agt ggc				5180
Ser Cys Asn Gln Ala Ser Gln Arg Ser Trp Asn Glu Phe Asn Ser Gly				
1633	1638	1643	1648	
cct tca tac ctt tgg gag tcg cca gcg aca gat ccc agt cct tcc tgg				5228
Pro Ser Tyr Leu Trp Glu Ser Pro Ala Thr Asp Pro Ser Pro Ser Trp				
1649	1654	1659	1664	
cca gcc agt tcc ggc tcc ccg acc cac aca gcc aca tcg gtc ctc ggt				5276
Pro Ala Ser Ser Gly Ser Pro Thr His Thr Ala Thr Ser Val Leu Gly				
1665	1670	1675	1680	

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Asn Thr Ser Gly Leu Trp Ser Thr Thr Pro Phe Ser Ser Ser Ile Trp	
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tcc agc aac ctt agc agc gcc ctt ccc ttc acc act cca gca aac acg	5372
Ser Ser Asn Leu Ser Ser Ala Leu Pro Phe Thr Thr Pro Ala Asn Thr	
1697 1702 1707 1712	
ctg gca agc atc ggc ctc atg ggc aca gaa aac tcc cct gct cct cac	5420
Leu Ala Ser Ile Gly Leu Met Gly Thr Glu Asn Ser Pro Ala Pro His	
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gct ccc tcc acc tcc agt cca gct gac gac ttg gga cag acc tac aac	5468
Ala Pro Ser Thr Ser Ser Pro Ala Asp Asp Leu Gly Gln Thr Tyr Asn	
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ccg tgg cgg ata tgg agc ccc acg att gga aga aga agc tgg gac cct	5516
Pro Trp Arg Ile Trp Ser Pro Thr Ile Gly Arg Arg Ser Ser Asp Pro	
1745 1750 1755 1760	
tgg tct aat tgg cac ttt cct cac gag aat taa attaagca aaaaacaaac	5567
Trp Ser Asn Ser His Phe Pro His Glu Asn *	
1761 1766 1771	
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tatgaacaca gatttgacat tacagctaag gaaataattt gagttgattc agaaatcctg	5927
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gagacgatca tgtgattttt ggccttcatt ctattgatgt aacgtataac gtttagtaat      180
ttgcataatt tgaactatct ttgcattcct gggataaatc ccacttgact gtgggatatt      240
attgatttg   atg tgt tgc tgg att tgg ttt gca ggc att ttg tgc aaa      288
              Met Cys Cys Trp Ile Trp Phe Ala Gly Ile Leu Cys Lys
                1             5             10

aat ttt gcg agg cgg cat gag gac ctg cgg cag gcc ctc ttc ggc agt      336
Asn-Phe-Ala Arg Arg-His Glu Asp Leu Arg Gln Ala Leu Phe Gly Ser
  14             19             24             29

ctc tct ggc ccg ggt tcc ctc ggc gtg cta ctg tgc gct cga tcc agc      384
Leu Ser Gly Pro Gly Ser Leu Gly Val Leu Leu Cys Ala Arg Ser Ser
  30             35             40             45

acc atg ggg aag cgg gac aat cgg gtg gcc tat atg aac cca ata gca      432
Thr Met Gly Lys Arg Asp Asn Arg Val Ala Tyr Met Asn Pro Ile Ala
  46             51             56             61

atg gcg aga tca agg ggt cca atc cag tct tca ggg cca aca ata cag      480
Met Ala Arg Ser Arg Gly Pro Ile Gln Ser Ser Gly Pro Thr Ile Gln
  62             67             72             77

gat tat ctg aat cga cca agg cct acc tgg gaa gaa gta aaa gag caa      528
Asp Tyr Leu Asn Arg Pro Arg Pro Thr Trp Glu Glu Val Lys Glu Gln
  78             83             88             93

cta gaa aag aaa aag aaa ggc tcc aag gct ttg gct gaa ttt gaa gaa      576
Leu Glu Lys Lys Lys Lys Gly Ser Lys Ala Leu Ala Glu Phe Glu Glu
  94             99             104            109

aaa atg aat gag aac tgg aag aaa gaa ctg gaa aaa cac agg gag aaa      624
Lys Met Asn Glu Asn Trp Lys Lys Glu Leu Glu Lys His Arg Glu Lys
  110            115            120            125

ttg tta agt gga agt gag agc tca tcc aaa aaa aga cag aga aag aaa      672
Leu Leu Ser Gly Ser Glu Ser Ser Ser Lys Lys Arg Gln Arg Lys Lys
  126            131            136            141

aaa gaa aag aag aaa tct ggt agg tat tca tct tct tct tca tca agc      720
Lys Glu Lys Lys Lys Ser Gly Arg Tyr Ser Ser Ser Ser Ser Ser Ser
  142            147            152            157

tct gat tct tcc agc agt tct tct gat tct gaa gat gag gat aag aaa      768
Ser Asp Ser Ser Ser Ser Ser Ser Asp Ser Glu Asp Glu Asp Lys Lys
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caa gga aaa cgg aga aag aaa aag aag aac cgt tca cat aaa tct tct				816
Gln Gly Lys Arg Arg Lys Lys Lys Lys Asn Arg Ser His Lys Ser Ser				
174	179	184	189	
gaa agc tcc atg tca gaa act gaa tca gac agt aag gat agt tta aaa				864
Glu Ser Ser Met Ser Glu Thr Glu Ser Asp Ser Lys Asp Ser Leu Lys				
190	195	200	205	
aag aaa aag aag tca aaa gat gga act gag aaa gaa aag gat att aaa				912
Lys Lys Lys Lys Ser Lys Asp Gly Thr Glu Lys Glu Lys Asp Ile Lys				
206	211	216	221	
gga ctc agc aaa aag aga aag atg tat tct gaa gat aaa cct tta tca				960
Gly Leu Ser Lys Lys Arg Lys Met Tyr Ser Glu Asp Lys Pro Leu Ser				
222	227	232	237	
tct gag tcc ttg tca gaa tca gag tat att gag gag gtg cga gca aaa				1008
Ser Glu Ser Leu Ser Glu Ser Glu Tyr Ile Glu Glu Val Arg Ala Lys				
238	243	248	253	
aag aag aaa agc agt gaa gaa cga gaa aaa gca aca gca agt atc tct				1056
Lys Lys Lys Ser Ser Glu Glu Arg Glu Lys Ala Thr Ala Ser Ile Ser				
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gaaccaactg g atg ctg tct tgc agt gtc tgc tgg aga aga gtc aca tgg				290
Met Leu Ser Cys Ser Val Cys Trp Arg Arg Val Thr Trp				
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aca ggg agc gtc tgg atg agg aag ctg gga aaa cac cct cag aca ccc				338

Thr	Gly	Ser	Val	Trp	Met	Arg	Lys	Leu	Gly	Lys	His	Pro	Gln	Thr	Pro		
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aca	ata	aac	aca	tat	gtg	atc	aag	ctg	ttc	gac	cgg	agc	gtg	gac	ttg		386
Thr	Ile	Asn	Thr	Tyr	Val	Ile	Lys	Leu	Phe	Asp	Arg	Ser	Val	Asp	Leu		
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gcc	cag	ttc	agc	gag	aac	acg	cca	ctg	tac	cca	atc	tgc	cgc	gcc	tgg		434
Ala	Gln	Phe	Ser	Glu	Asn	Thr	Pro	Leu	Tyr	Pro	Ile	Cys	Arg	Ala	Trp		
46					51					56					61		
atg	cgc	aac	agc	ccc	tct	gtg	cgc	gag	cgt	gaa	tgc	tct	ccc	agc	tca		482
Met	Arg	Asn	Ser	Pro	Ser	Val	Arg	Glu	Arg	Glu	Cys	Ser	Pro	Ser	Ser		
62					67					72					77		
ccc	ctg	ccc	cgc	ctg	cct	gag	gat	gag	gag	ggc	tca	gag	gta	acc	aac		530
Pro	Leu	Pro	Pro	Leu	Pro	Glu	Asp	Glu	Glu	Gly	Ser	Glu	Val	Thr	Asn		
78					83					88					93		
agc	aag	agt	cgt	gat	gtg	tac	aag	ctg	ccg	cca	ccc	aca	ccc	ccg	ggg		578
Ser	Lys	Ser	Arg	Asp	Val	Tyr	Lys	Leu	Pro	Pro	Pro	Thr	Pro	Pro	Gly		
94					99					104					109		
cca	ccc	gga	gat	gcc	tgc	aga	tcc	cgc	atc	cca	tct	cca	ctg	cag	cct		626
Pro	Pro	Gly	Asp	Ala	Cys	Arg	Ser	Arg	Ile	Pro	Ser	Pro	Leu	Gln	Pro		
110					115					120					125		
gag	atg	cag	ggc	acc	cct	gac	gat	gag	ccc	tct	gag	ccc	gag	ccc	tca		674
Glu	Met	Gln	Gly	Thr	Pro	Asp	Asp	Glu	Pro	Ser	Glu	Pro	Glu	Pro	Ser		
126					131					136					141		
ccc	tcc	aca	ctc	atc	tat	cgc	aac	atg	cag	cgc	tgg	aaa	cgc	atc	cgc		722
Pro	Ser	Thr	Leu	Ile	Tyr	Arg	Asn	Met	Gln	Arg	Trp	Lys	Arg	Ile	Arg		
142					147					152					157		
cag	agg	tgg	aag	gag	gcc	tct	cat	cgg	aac	cag	ctt	cgt	tac	tca	gaa		770
Gln	Arg	Trp	Lys	Glu	Ala	Ser	His	Arg	Asn	Gln	Leu	Arg	Tyr	Ser	Glu		
158					163					168					173		
agc	atg	aag	atc	cta	cga	gag	atg	tac	gaa	cga	cag	tga					809
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aaggtctctg aggccccgt ctgctgactg catgacaaac cctaaaggaa atg cca	536
	Met Pro
	1

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Ile Val Met Ala Arg Asp Leu Glu Glu Thr Ala Ser Ser Ser Glu Asp	
3 8 13 18	
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Glu Glu Val Ile Ser Gln Glu Asp His Pro Cys Ile Met Trp Thr Gly	
19 24 29 34	
ggc tgc agg aga att cca gtt ttg gta ttc cat gcc gac gct att ctt	680
Gly Cys Arg Arg Ile Pro Val Leu Val Phe His Ala Asp Ala Ile Leu	
35 40 45 50	
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Thr Lys Asp Asn Asn Ile Arg Val Ile Gly Glu Arg Tyr His Leu Ser	
51 56 61 66	
tat aag att gta cga acg gac agt cgc cta gta cgc agc att ctg aca	776
Tyr Lys Ile Val Arg Thr Asp Ser Arg Leu Val Arg Ser Ile Leu Thr	
67 72 77 82	
gcc cat gga ttt cat gaa gtt cac cca agc agc act gac tat aac cta	824
Ala His Gly Phe His Glu Val His Pro Ser Ser Thr Asp Tyr Asn Leu	
83 88 93 98	
atg tgg aca gga tcc cac ctg aag ccc ttc tta ctg cgc acc ctc tct	872
Met Trp Thr Gly Ser His Leu Lys Pro Phe Leu Leu Arg Thr Leu Ser	
99 104 109 114	
gaa gca caa aaa gtt aat cac ttt ccc agg tct tat gaa ctt acc cgg	920
Glu Ala Gln Lys Val Asn His Phe Pro Arg Ser Tyr Glu Leu Thr Arg	
115 120 125 130	
aag gac cga ctg tac aaa aac att att cga atg cag cat aca cat gga	968
Lys Asp Arg Leu Tyr Lys Asn Ile Ile Arg Met Gln His Thr His Gly	
131 136 141 146	
ttc aag gtt ttt cac atc ctc ccc cag acc ttc ctc ctg cca gct gag	1016

Phe	Lys	Val	Phe	His	Ile	Leu	Pro	Gln	Thr	Phe	Leu	Leu	Pro	Ala	Glu	
147					152					157					162	
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Tyr	Ala	Glu	Phe	Cys	Asn	Ser	Tyr	Ser	Lys	Asp	Arg	Gly	Pro	Trp	Ile	
163					168					173					178	
gta	aaa	cca	gtg	gca	tct	tca	agg	ggg	cgg	ggc	gtc	tac	ctg	atc	aac	1112
Val	Lys	Pro	Val	Ala	Ser	Ser	Arg	Gly	Arg	Gly	Val	Tyr	Leu	Ile	Asn	
179					184					189					194	
aat	cca	aac	cag	atc	tcc	ctg	gaa	gag	aac	att	ttg	gtc	tcc	cgt	tac	1160
Asn	Pro	Asn	Gln	Ile	Ser	Leu	Glu	Glu	Asn	Ile	Leu	Val	Ser	Arg	Tyr	
195					200					205					210	
att	aac	aac	ccc	ctg	ctc	ata	gat	gat	ttc	aag	ttt	gac	gtg	cgc	ctc	1208
Ile	Asn	Asn	Pro	Leu	Leu	Ile	Asp	Asp	Phe	Lys	Phe	Asp	Val	Arg	Leu	
211					216					221					226	
tat	gtg	ctc	gtg	act	tcc	tat	gat	cct	ctt	gtc	atc	tat	ctc	tat	gaa	1256
Tyr	Val	Leu	Val	Thr	Ser	Tyr	Asp	Pro	Leu	Val	Ile	Tyr	Leu	Tyr	Glu	
227					232					237					242	
gaa	gga	ttg	gct	agg	ttt	gca	act	gtg	cga	tat	gat	caa	gga	gcc	aag	1304
Glu	Gly	Leu	Ala	Arg	Phe	Ala	Thr	Val	Arg	Tyr	Asp	Gln	Gly	Ala	Lys	
243					248					253					258	
aac	att	cgg	aac	cag	ttc	atg	cat	ctg	aca	aac	tac	agt	gtc	aac	aag	1352
Asn	Ile	Arg	Asn	Gln	Phe	Met	His	Leu	Thr	Asn	Tyr	Ser	Val	Asn	Lys	
259					264					269					274	
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Lys	Ser	Gly	Asp	Tyr	Val	Ser	Cys	Asp	Asp	Pro	Glu	Val	Glu	Asp	Tyr	
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Gly	Asn	Lys	Trp	Ser	Met	Ser	Ala	Met	Leu	Arg	Tyr	Leu	Lys	Gln	Glu	
291					296					301					306	
ggc	aga	gat	aca	acc	gca	ttg	atg	gcc	cat	gta	gaa	gac	ctg	atc	att	1496
Gly	Arg	Asp	Thr	Thr	Ala	Leu	Met	Ala	His	Val	Glu	Asp	Leu	Ile	Ile	
307					312					317					322	
aag	act	ata	atc	tct	gct	gaa	cta	gct	att	gct	act	gcc	tgt	aaa	acc	1544
Lys	Thr	Ile	Ile	Ser	Ala	Glu	Leu	Ala	Ile	Ala	Thr	Ala	Cys	Lys	Thr	
323					328					333					338	
ttt	gtt	cct	cat	cgc	agc	agt	tgt	ttt	gaa	ctc	tat	ggc	ttt	gac	gtg	1592
Phe	Val	Pro	His	Arg	Ser	Ser	Cys	Phe	Glu	Leu	Tyr	Gly	Phe	Asp	Val	
339					344					349					354	
ctc	ata	gat	tct	act	ctg	aag	cca	tgg	ttg	ttg	gaa	gtg	aat	ctc	tct	1640
Leu	Ile	Asp	Ser	Thr	Leu	Lys	Pro	Trp	Leu	Leu	Glu	Val	Asn	Leu	Ser	
355					360					365					370	
cct	tct	ttg	gcc	tgt	gat	gcg	cct	ctg	gac	cta	aag	att	aaa	gcc	agt	1688
Pro	Ser	Leu	Ala	Cys	Asp	Ala	Pro	Leu	Asp	Leu	Lys	Ile	Lys	Ala	Ser	

371	376	381	386	
atg att tca gat atg ttc act gtt gta gga ttt gtg tgc caa gat cct				1736
Met Ile Ser Asp Met Phe Thr Val Val Gly Phe Val Cys Gln Asp Pro				
387	392	397	402	
gcc cag cgg gca tca act cgg cca att tat ccc acc ttc gag tct tcc				1784
Ala Gln Arg Ala Ser Thr Arg Pro Ile Tyr Pro Thr Phe Glu Ser Ser				
403	408	413	418	
agg cga aac cct ttc cag aaa cct cag cgt tgc cgt cca ctc tct gcc				1832
Arg Arg Asn Pro Phe Gln Lys Pro Gln Arg Cys Arg Pro Leu Ser Ala				
419	424	429	434	
agt gat gcg gaa atg aaa aac ctc gtg ggc tca gcc cgg gag aaa ggg				1880
Ser Asp Ala Glu Met Lys Asn Leu Val Gly Ser Ala Arg Glu Lys Gly				
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cca ggg aag ttg ggt ggt tct gtg ctt ggt ctg tca atg gag gag atc				1928
Pro Gly Lys Leu Gly Gly Ser Val Leu Gly Leu Ser Met Glu Glu Ile				
451	456	461	466	
aaa gtt tta cga agg gtg aag gag gag aat gat cgg cga ggt gga ttt				1976
Lys Val Leu Arg Arg Val Lys Glu Glu Asn Asp Arg Arg Gly Gly Phe				
467	472	477	482	
att cgc ata ttt cct aca tct gag aca tgg gaa ata tat ggg tcc tac				2024
Ile Arg Ile Phe Pro Thr Ser Glu Thr Trp Glu Ile Tyr Gly Ser Tyr				
483	488	493	498	
ctc gag cat aag acc tca atg aac tat atg ctg gca aca cgc ctc ttc				2072
Leu Glu His Lys Thr Ser Met Asn Tyr Met Leu Ala Thr Arg Leu Phe				
499	504	509	514	
cag gac aga atg act gct gat gga gcg cca gaa ttg aag ata gag agt				2120
Gln Asp Arg Met Thr Ala Asp Gly Ala Pro Glu Leu Lys Ile Glu Ser				
515	520	525	530	
ctg aat tca aag gcc aag ctg cat gct gca ctt tac gag agg aag ctc				2168
Leu Asn Ser Lys Ala Lys Leu His Ala Ala Leu Tyr Glu Arg Lys Leu				
531	536	541	546	
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Leu Ser Leu Glu Val Arg Lys Arg Arg Arg Arg Ser Ser Arg Leu Arg				
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Ala Met Arg Pro Lys Tyr Pro Val Ile Thr Gln Pro Ala Glu Met Asn				
563	568	573	578	
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Val Lys Thr Glu Thr Glu Ser Glu Glu Glu Glu Glu Val Ala Leu Asp				
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aat gaa gat gaa gaa cag gag gct tcc cag gag gag tct gca gga ttt				2360
Asn Glu Asp Glu Glu Gln Glu Ala Ser Gln Glu Glu Ser Ala Gly Phe				
595	600	605	610	

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Phe Asn Leu Met Gln Ile Leu Gln Asp Asn Gly Asn Leu Ser Lys Met	
659 664 669 674	
cag gcc cga ata gca ttc tct gcc tat ctc cag cat gtt caa att cgc	2600
Gln Ala Arg Ile Ala Phe Ser Ala Tyr Leu Gln His Val Gln Ile Arg	
675 680 685 690	
ctg atg aaa gac agt ggc ggt cag acg ttc agt gcc agt tgg gct gcc	2648
Leu Met Lys Asp Ser Gly Gly Gln Thr Phe Ser Ala Ser Trp Ala Ala	
691 696 701 706	
aaa gag gat gaa cag atg gag ctg gtt gtt cgt ttc ctc aag cga gca	2696
Lys Glu Asp Glu Gln Met Glu Leu Val Val Arg Phe Leu Lys Arg Ala	
707 712 717 722	
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Ser Asn Asn Leu Gln His Ser Leu Arg Met Val Leu Pro Ser Arg Arg	
723 728 733 738	
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Lys Phe Val Glu Val Tyr Lys Glu Ala His Leu Leu Ala Leu His Ile	
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Leu Pro Ala Gly Pro Val Gly Ala Ser Ser Trp Gln Ala Lys Arg Val				
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Thr Pro Thr Asn Gln Phe Lys Ile Pro Lys Phe Ser Ile Gly Asp Ser				
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Cys Thr Ser Val Gly Arg Val Thr Val His Ser Thr Pro Val Arg Arg				
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Asn Ile Ser Lys Ser Gly Arg Met Gly Pro Ala Met Leu Arg Pro Ala	
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Leu Pro Ala Gly Pro Val Gly Ala Ser Ser Trp Gln Ala Lys Arg Val	
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Asp Val Ser Glu Leu Ala Ala Glu Gln Leu Thr Ala Pro Pro Ser Ala	
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Ser Pro Thr Gln Pro Gln Thr Pro Glu Gly Gly Gly Gln Trp Leu Asn	
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Ser Ser Cys Ala Trp Ser Glu Ser Ser Gln Leu Asn Lys Thr Arg Ser	
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Ile Arg Arg Arg Asp Ser Cys Leu Asn Ser Lys Thr Lys Val Met Pro	
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Thr Pro Thr Asn Gln Phe Lys Ile Pro Lys Phe Ser Ile Gly Asp Ser	
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Ala Ser Gln Pro Leu Ile Asp Leu Pro Leu Ile Asp Phe Cys Asp Thr	
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Leu Met Thr Asn Thr Pro Asp Met Asn Lys Asn Val Ala Lys Pro Ser	
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Ser Pro Glu Ala Asp Lys Glu Asn Val Asp Ser Pro Leu Leu Lys Phe	
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Met Ala Ala Ala
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Arg Pro Arg His Phe Arg Glu Phe Thr Val Cys Ser Ile Gly Thr Ala

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Asn Ala Val Ala Gly Ala Val Lys Tyr Ser Glu Ser Ala Gly Gly Phe				
37	42	47	52	
tac tac gtg gag agt ggc aag ttg ttc tcc gta acc aga aac agg ttc				487
Tyr Tyr Val Glu Ser Gly Lys Leu Phe Ser Val Thr Arg Asn Arg Phe				
53	58	63	68	
att cat tgg aag acc tct gga gat aca ttg gag ctg atg gag gag tca				535
Ile His Trp Lys Thr Ser Gly Asp Thr Leu Glu Leu Met Glu Glu Ser				
69	74	79	84	
ctg gac ata aat ctg ttg aat aat gcc att cgc cta aaa ttc caa aat				583
Leu Asp Ile Asn Leu Leu Asn Asn Ala Ile Arg Leu Lys Phe Gln Asn				
85	90	95	100	
tgc agt gtt tta cct gga ggg gtt tat gtc tct gag act cag aat cgt				631
Cys Ser Val Leu Pro Gly Gly Val Tyr Val Ser Glu Thr Gln Asn Arg				
101	106	111	116	
gtg ata atc ttg atg tta acc aat caa aca gtg cac agg tta ctt tta				679
Val Ile Ile Leu Met Leu Thr Asn Gln Thr Val His Arg Leu Leu Leu				
117	122	127	132	
cca cac ccc tcc cgg atg tat agg agt gag ttg gta gtt gac agt cag				727
Pro His Pro Ser Arg Met Tyr Arg Ser Glu Leu Val Val Asp Ser Gln				
133	138	143	148	
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Met Gln Ser Ile Phe Thr Asp Ile Gly Lys Val Asp Phe Thr Asp Pro				
149	154	159	164	
tgc aac tat cag tta att cca gca gta cct gga ata tct cct aat tcc				823
Cys Asn Tyr Gln Leu Ile Pro Ala Val Pro Gly Ile Ser Pro Asn Ser				
165	170	175	180	
acc gcc tct aca gcc tgg ctc agc agt gat ggg gag gcc ctg ttt gcc				871
Thr Ala Ser Thr Ala Trp Leu Ser Ser Asp Gly Glu Ala Leu Phe Ala				
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tta cca tgt gct tct ggg gga atc ttt gtt ctt aag cta cct cct tat				919
Leu Pro Cys Ala Ser Gly Gly Ile Phe Val Leu Lys Leu Pro Pro Tyr				
197	202	207	212	
gac ata cct ggt atg gtg tca gtc gtg gaa ctg aaa cag agt tca gta				967
Asp Ile Pro Gly Met Val Ser Val Val Glu Leu Lys Gln Ser Ser Val				
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Met Gln Arg Leu Leu Thr Gly Trp Met Pro Thr Ala Ile Arg Gly Asp				
229	234	239	244	
cag tcg cct tca gat cgt ccc ctc agt ctt gct gtt cat tgt gtg gag				1063
Gln Ser Pro Ser Asp Arg Pro Leu Ser Leu Ala Val His Cys Val Glu				
245	250	255	260	

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His Asp Ala Phe Ile Phe Ala Leu Cys Gln Asp His Lys Leu Arg Met	
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Tyr Val Pro Val Lys Lys Asp Leu Arg Leu Thr Ala Gly Thr Gly His	
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Lys Leu Arg Leu Ala Tyr Ser Pro Thr Met Gly Leu Tyr Leu Gly Ile	
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Ser Thr Glu Ser Asn Arg Tyr Ser Leu Asp His Ile Ser Ser Leu Phe	
341 346 351 356	
act tct cag gag aca ctg att gac ttt gcc tta act tcc acg gat atc	1399
Thr Ser Gln Glu Thr Leu Ile Asp Phe Ala Leu Thr Ser Thr Asp Ile	
357 362 367 372	
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Trp Ala Leu Trp His Asp Ala Glu Asn Gln Thr Val Val Lys Tyr Ile	
373 378 383 388	
aac ttt gaa cat aat gtt gca ggt cag tgg aat cca gtt ttt atg cag	1495
Asn Phe Glu His Asn Val Ala Gly Gln Trp Asn Pro Val Phe Met Gln	
389 394 399 404	
cct ctg cca gag gaa gag att gtc atc aga gat gat caa gac ccc aga	1543
Pro Leu Pro Glu Glu Glu Ile Val Ile Arg Asp Asp Gln Asp Pro Arg	
405 410 415 420	
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Glu Met Tyr Leu Gln Ser Leu Phe Thr Pro Gly Gln Phe Thr Asn Glu	
421 426 431 436	
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Ala Leu Cys Lys Ala Leu Gln Ile Phe Cys Arg Gly Thr Glu Arg Asn	
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Leu Asp Leu Ser Trp Ser Glu Leu Lys Lys Glu Val Thr Leu Ala Val	
453 458 463 468	
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Glu Asn Glu Leu Gln Gly Ser Val Thr Glu Tyr Glu Phe Ser Gln Glu	
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Cys Leu Gln Tyr Gln Glu Ala Leu Ser His Pro Leu Ala Leu His Leu	
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Asn Pro His Thr Asn Met Val Cys Leu Leu Lys Lys Gly Tyr Leu Ser	
517 522 527 532	
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Phe Leu Ile Pro Ser Ser Leu Val Asp His Leu Tyr Leu Leu Pro Tyr	
533 538 543 548	
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Glu Asn Leu Leu Thr Glu Asp Glu Thr Thr Ile Ser Asp Asp Val Asp	
549 554 559 564	
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Ile Ala Arg Asp Val Ile Cys Leu Ile Lys Cys Leu Arg Leu Ile Glu	
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gag tca gta act gtg gat atg tca gtt ata atg gaa atg agt tgt tat	2071
Glu Ser Val Thr Val Asp Met Ser Val Ile Met Glu Met Ser Cys Tyr	
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aac cta cag tct ccg gaa aag gct gca gag cag att ctg gaa gat atg	2119
Asn Leu Gln Ser Pro Glu Lys Ala Ala Glu Gln Ile Leu Glu Asp Met	
597 602 607 612	
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Ile Thr Ile Asp Val Glu Asn Val Met Glu Asp Ile Cys Ser Lys Leu	
613 618 623 628	
caa gag att agg aac cca atc cat gca att gga cta ctt ata cgg gaa	2215
Gln Glu Ile Arg Asn Pro Ile His Ala Ile Gly Leu Leu Ile Arg Glu	
629 634 639 644	
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Met Asp Tyr Glu Thr Glu Val Glu Met Glu Lys Gly Phe Asn Pro Ala	
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Thr Ala Gly Tyr Ile Val Cys Arg Gly Val His Lys Ile Ala Ser Thr	
677 682 687 692	
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Arg Phe Leu Ile Cys Arg Asp Leu Leu Ile Leu Gln Gln Leu Leu Met	
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Gln Gln Asp Leu Leu His Arg Thr Ala Pro Leu Leu Leu Ser Tyr Tyr	
725 730 735 740	
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Leu Ile Lys Trp Gly Ser Glu Cys Leu Ala Thr Asp Val Pro Leu Asp	
741 746 751 756	
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Thr Leu Glu Ser Asn Leu Gln His Leu Ser Val Leu Glu Leu Thr Asp	
757 762 767 772	
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Ser Gly Ala Leu Met Ala Asn Arg Phe Val Ser Ser Pro Gln Thr Ile	
773 778 783 788	
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Val Glu Leu Phe Phe Gln Glu Val Ala Arg Lys His Ile Ile Ser His	
789 794 799 804	
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Leu Phe Ser Gln Pro Lys Ala Pro Leu Ser Gln Thr Gly Leu Asn Trp	
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Pro Glu Met Ile Thr Ala Ile Thr Ser Tyr Leu Leu Gln Leu Leu Trp	
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Pro Ser Asn Pro Gly Cys Leu Phe Leu Glu Cys Leu Met Gly Asn Cys	
837 842 847 852	
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Val Thr Gly Glu Gly Gln Lys Ala Leu Glu Cys Phe Cys Gln Ala Ala	
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Ser Glu Val Gly Lys Glu Glu Phe Leu Asp Arg Leu Ile Arg Ser Glu	
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Asp Gly Glu Ile Val Ser Thr Pro Arg Leu Gln Tyr Tyr Asp Lys Val	
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Thr Leu Arg Thr Cys Ile Phe Lys His His Leu Asp Leu Gly His Asn				
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Ser Gln Ala Tyr Glu Ala Leu Thr Gln Ile Pro Asp Ser Ser Arg Gln				
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Lys Arg Asn His Asp Gly Glu Cys Thr Ala Ala Pro Thr Asn Arg Gln				
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Ile Glu Ile Leu Glu Leu Glu Asp Leu Glu Lys Glu Cys Ser Leu Ala				
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Arg Ile Arg Leu Thr Leu Ala Gln His Asp Pro Ser Ala Val Ala Val				
1157	1162	1167	1172	

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Ala Gly Ser Ser Ser Ala Glu Glu Met Val Thr Leu Leu Val Gln Ala	
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Gly Leu Phe Asp Thr Ala Ile Ser Leu Cys Gln Thr Phe Lys Leu Pro	
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 Met His Leu Cys Gly Ser Asn Gly Leu Leu Thr Gln Thr Asp Pro Lys
 1 5 10 15
 gag caa caa agg cag ctg aag aag cag aag aac cgg gca gcc gcc cag 155
 Glu Gln Gln Arg Gln Leu Lys Lys Gln Lys Asn Arg Ala Ala Ala Gln
 17 22 27 32
 cga agc cgg cag aag cac aca gac aag gca gac gcc ctg cac cag cag 203
 Arg Ser Arg Gln Lys His Thr Asp Lys Ala Asp Ala Leu His Gln Gln
 33 38 43 48
 cac gag tct ctg gaa aaa gac aac ctc gcc ctg cgg aag gag atc cag 251
 His Glu Ser Leu Glu Lys Asp Asn Leu Ala Leu Arg Lys Glu Ile Gln
 49 54 59 64
 tcc ctg cag gcc gag ctg gcg tgg tgg agc cgg acc ctg cac gtg cat 299
 Ser Leu Gln Ala Glu Leu Ala Trp Trp Ser Arg Thr Leu His Val His
 65 70 75 80
 gag cgc ctg tgc ccc atg gat tgt gcc tcc tgc tca gct cca ggg ctc 347
 Glu Arg Leu Cys Pro Met Asp Cys Ala Ser Cys Ser Ala Pro Gly Leu
 81 86 91 96
 ctg ggc tgc tgg gac cag gct gag ggg ctc ctg ggc cct ggc cca cag 395
 Leu Gly Cys Trp Asp Gln Ala Glu Gly Leu Leu Gly Pro Gly Pro Gln
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 gga caa cat ggc tgc cgg gag cag ctg gag ctg ttc cag acc ccg ggt 443
 Gly Gln His Gly Cys Arg Glu Gln Leu Glu Leu Phe Gln Thr Pro Gly
 113 118 123 128

tcc tgt tac cca gct cag ccg ctc tct cca ggt cca cag cct cat gat	491
Ser Cys Tyr Pro Ala Gln Pro Leu Ser Pro Gly Pro Gln Pro His Asp	
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Ser Pro Ser Leu Leu Gln Cys Pro Leu Pro Ser Leu Ser Leu Gly Pro	
145 150 155 160	

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Ala Val Val Ala Glu Pro Pro Val Gln Leu Ser Pro Ser Pro Leu Leu	
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Phe Ala Ser His Thr Gly Ser Ser Leu Gln Gly Ser Ser Ser Lys Leu	
177 182 187 192	

agt gcc ctc cag ccc agc ctc acg gcc caa act gcc cct cca cag ccc	683
Ser Ala Leu Gln Pro Ser Leu Thr Ala Gln Thr Ala Pro Pro Gln Pro	
193 198 203 208	

ctc gag ctg gag cat ccc acc aga ggg aag ctg ggg tcc tct ccc gac	731
Leu Glu Leu Glu His Pro Thr Arg Gly Lys Leu Gly Ser Ser Pro Asp	
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Asn Pro Ser Ser Ala Leu Gly Leu Ala Arg Leu Gln Ser Arg Glu His	
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Lys Pro Ala Leu Ser Ala Ala Thr Trp Gln Gly Leu Val Val Asp Pro	
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Ser Pro His Pro Leu Leu Ala Phe Pro Leu Leu Ser Ser Ala Gln Val	
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His Phe *	
273	

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505

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tgggtgtagt ggccacagcc ttacaggcag gcaggggtgg ttggtgtcaa cagggggggcc 180
aacagggtac cagagccaag accctgggcc tcttcccccg ccgccttctt gcagatctgc 240
ttggctttga ggaagagtgg cagtactgcc tcaactgcata aggg atg gga tca gag 296
Met Gly Ser Glu
1
aac agt gct tta aag agc tat aca ctg aga gaa cca cca ttt acc tta 344
Asn Ser Ala Leu Lys Ser Tyr Thr Leu Arg Glu Pro Pro Phe Thr Leu
5 10 15 20
ccc tct gga ctt gct gtt tat ccc gct gta ctg caa gat ggc aaa ttt 392
Pro Ser Gly Leu Ala Val Tyr Pro Ala Val Leu Gln Asp Gly Lys Phe
21 26 31 36
gct tca gtt ttt gtg tat aag aga gaa aat gaa gac aag gtt aat aaa 440
Ala Ser Val Phe Val Tyr Lys Arg Glu Asn Glu Asp Lys Val Asn Lys
37 42 47 52
gct gcc aag cat ttg aag aca ctt cgt cac cct tgc ttg cta aga ttt 488
Ala Ala Lys His Leu Lys Thr Leu Arg His Pro Cys Leu Leu Arg Phe
53 58 63 68
tta tct tgt act gtg gaa gcg gat ggc att cat ctt gtc act gag cga 536
Leu Ser Cys Thr Val Glu Ala Asp Gly Ile His Leu Val Thr Glu Arg
69 74 79 84
gta cag ccc ctg gaa gtg gct ttg gaa aca ttg tct tct gca gag gtc 584
Val Gln Pro Leu Glu Val Ala Leu Glu Thr Leu Ser Ser Ala Glu Val
85 90 95 100
tgt gct ggg atc tat gac ata ttg ctg gct ctt atc ttc ctt cat gac 632
Cys Ala Gly Ile Tyr Asp Ile Leu Leu Ala Leu Ile Phe Leu His Asp
101 106 111 116

aga gga cac cta aca cac aat aat gtc tgt tta tca tct gtg ttt gtg	680
Arg Gly His Leu Thr His Asn Asn Val Cys Leu Ser Ser Val Phe Val	
117 122 127 132	
agt gaa gat gga cac tgg aag cta gga gga atg gaa act gtt tgt aaa	728
Ser Glu Asp Gly His Trp Lys Leu Gly Gly Met Glu Thr Val Cys Lys	
133 138 143 148	
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Val Ser Gln Ala Thr Pro Glu Phe Leu Arg Ser Ile Gln Ser Ile Arg	
149 154 159 164	
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Asp Pro Ala Ser Ile Pro Pro Glu Glu Met Ser Pro Glu Phe Thr Thr	
165 170 175 180	
ctc cca gag tgt cat gga cat gcc cgg gat gcc ttt tca ttt gga aca	872
Leu Pro Glu Cys His Gly His Ala Arg Asp Ala Phe Ser Phe Gly Thr	
181 186 191 196	
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Leu Val Glu Ser Leu Leu Thr Ile Leu Asn Glu Gln Val Ser Ala Asp	
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Val Leu Ser Ser Phe Gln Gln Thr Leu His Ser Thr Leu Leu Asn Pro	
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Ile Pro Lys Cys Arg Pro Ala Leu Cys Thr Leu Leu Ser His Asp Phe	
229 234 239 244	
ttc aga aat gat ttt ctg gaa gtt gtg aat ttc ttg aaa agt tta aca	1064
Phe Arg Asn Asp Phe Leu Glu Val Val Asn Phe Leu Lys Ser Leu Thr	
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Arg Val Ser Cys Leu Ser Glu Glu Leu Ile Ala Ser Arg Leu Val Pro	
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Phe Leu Pro Tyr Leu Leu Gly Pro Lys Lys Asp His Ala Gln Gly Glu	
309 314 319 324	
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Thr Pro Cys Leu Leu Ser Pro Ala Leu Phe Gln Ser Arg Val Ile Pro	
325 330 335 340	
gtg ctt ctc cag ttg ttt gaa gtt cat gaa gag cat gtg cgg atg gtg	1352

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Leu	Leu	Ser	His	Ile	Glu	Ala	Tyr	Val	Glu	His	Phe	Thr	Gln	Glu	Gln		
357					362					367					372		
ctg	aag	aaa	gtc	atc	ttg	cca	cag	gtt	ttg	ctg	ggc	ctg	cgt	gat	act	1448	
Leu	Lys	Lys	Val	Ile	Leu	Pro	Gln	Val	Leu	Leu	Gly	Leu	Arg	Asp	Thr		
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agc	gat	tcc	att	gtg	gca	att	act	ctg	cat	agc	cta	gca	gtg	ctg	gtc	1496	
Ser	Asp	Ser	Ile	Val	Ala	Ile	Thr	Leu	His	Ser	Leu	Ala	Val	Leu	Val		
389					394					399					404		
tct	ctg	ctt	gga	cca	gag	gtg	gtt	gtg	gga	gga	gaa	cga	acc	aag	atc	1544	
Ser	Leu	Leu	Gly	Pro	Glu	Val	Val	Val	Gly	Gly	Glu	Arg	Thr	Lys	Ile		
405					410					415					420		
ttc	aaa	cgc	act	gcc	cca	agt	ttt	act	aaa	aat	act	gac	ctt	tct	cta	1592	
Phe	Lys	Arg	Thr	Ala	Pro	Ser	Phe	Thr	Lys	Asn	Thr	Asp	Leu	Ser	Leu		
421					426					431					436		
gaa	ggc	gat	cca	ttt	tct	cag	cct	att	aaa	ttt	ccc	ata	aat	gga	ctc	1640	
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437					442					447					452		
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Ser	Asp	Val	Lys	Asn	Thr	Ser	Glu	Asp	Ser	Glu	Asn	Phe	Pro	Ser	Ser		
453					458					463					468		
tct	aaa	aag	tct	gag	gag	tgg	cct	gac	tgg	agt	gaa	cct	gag	gag	cct	1736	
Ser	Lys	Lys	Ser	Glu	Glu	Trp	Pro	Asp	Trp	Ser	Glu	Pro	Glu	Glu	Pro		
469					474					479					484		
gaa	aat	caa	act	gtc	aac	ata	cag	att	tgg	cct	aga	gaa	cct	tgt	gat	1784	
Glu	Asn	Gln	Thr	Val	Asn	Ile	Gln	Ile	Trp	Pro	Arg	Glu	Pro	Cys	Asp		
485					490					495					500		
gat	gtc	aag	tcc	cag	tgc	act	acc	ttg	gat	gtg	gaa	gag	tca	tct	tgg	1832	
Asp	Val	Lys	Ser	Gln	Cys	Thr	Thr	Leu	Asp	Val	Glu	Glu	Ser	Ser	Trp		
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Asp	Asp	Cys	Glu	Pro	Ser	Ser	Leu	Asp	Thr	Lys	Val	Asn	Pro	Gly	Gly		
517					522					527					532		
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Gly	Ile	Thr	Ala	Thr	Lys	Pro	Val	Thr	Ser	Gly	Glu	Gln	Lys	Pro	Ile		
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cct	gct	ttg	ctt	tca	ctc	act	gaa	gag	tct	atg	cct	tgg	aaa	tca	agc	1976	
Pro	Ala	Leu	Leu	Ser	Leu	Thr	Glu	Glu	Ser	Met	Pro	Trp	Lys	Ser	Ser		
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atc gag ccg cca aaa gta tca tca caa gaa agg ccc ctt aag gtt cca				2072
Ile Glu Pro Pro Lys Val Ser Ser Gln Glu Arg Pro Leu Lys Val Pro				
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tca gaa ctt ggt tta gga gag gaa ttc acc att caa gta aaa aag aag				2120
Ser Glu Leu Gly Leu Gly Glu Glu Phe Thr Ile Gln Val Lys Lys Lys				
597	602	607	612	
cca gta aaa gat cct gag atg gat tgg ttt gct gat atg atc cca gaa				2168
Pro Val Lys Asp Pro Glu Met Asp Trp Phe Ala Asp Met Ile Pro Glu				
613	618	623	628	
att aag cct tct gct gct ttt ctt ata tta cct gaa ctg agg aca gaa				2216
Ile Lys Pro Ser Ala Ala Phe Leu Ile Leu Pro Glu Leu Arg Thr Glu				
629	634	639	644	
atg gtc cca aaa aag gat gat gtc tcc cca gtg atg cag ttt tcc tca				2264
Met Val Pro Lys Lys Asp Asp Val Ser Pro Val Met Gln Phe Ser Ser				
645	650	655	660	
aaa ttt gct gca gca gaa att act gag gga gag gct gaa ggc tgg gaa				2312
Lys Phe Ala Ala Ala Glu Ile Thr Glu Gly Glu Ala Glu Gly Trp Glu				
661	666	671	676	
gaa gaa ggg gag ctg aac tgg gaa gat aat aac tgg tga caatagatgt				2361
Glu Glu Gly Glu Leu Asn Trp Glu Asp Asn Asn Trp *				
677	682	687		
gagttaaact ttaggaaaaa ggattccctt tttttaaaaa aaatcaatac ctcaaaagca				2421
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tgaccocggtt tgtaaaaa  atg gaa ttt caa gca gta gtg atg gca gta ggt      170
                      Met Glu Phe Gln Ala Val Val Met Ala Val Gly
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gga gga tct cgg atg aca gac cta act tcc agc att ccc aaa cct ctg      218
Gly Gly Ser Arg Met Thr Asp Leu Thr Ser Ser Ile Pro Lys Pro Leu
12                      17          22          27

ctt cca gtt ggg aac aaa cct tta att tgg tac cca ttg aac ctg ctt      266
Leu Pro Val Gly Asn Lys Pro Leu Ile Trp Tyr Pro Leu Asn Leu Leu
28                      33          38          43

gag cgt gtt gga ttt gaa gaa gtc att gtg gtt aca acc agg gat gtt      314
Glu Arg Val Gly Phe Glu Glu Val Ile Val Val Thr Thr Arg Asp Val
44                      49          54          59

caa aag gct cta tgt gca gaa ttc aag atg aaa atg aag cca gat att      362
Gln Lys Ala Leu Cys Ala Glu Phe Lys Met Lys Met Lys Pro Asp Ile
60                      65          70          75

gtg tgt att cct gat gac gct gac atg gga act gca gat tct ttg cgc      410
Val Cys Ile Pro Asp Asp Ala Asp Met Gly Thr Ala Asp Ser Leu Arg
76                      81          86          91

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Tyr Ile Tyr Pro Lys Leu Lys Thr Asp Val Leu Val Leu Ser Cys Asp
92                      97          102          107

ctg ata aca gac gtt gcc tta cat gag gtt gtg gac ctg ttt aga gct      506
Leu Ile Thr Asp Val Ala Leu His Glu Val Val Asp Leu Phe Arg Ala
108                      113          118          123

tat gat gca tca ctt gct atg ttg atg aga aaa ggc caa gat agc ata      554
Tyr Asp Ala Ser Leu Ala Met Leu Met Arg Lys Gly Gln Asp Ser Ile
124                      129          134          139

gaa cct gtt ccc ggt caa aag ggg aaa aaa aaa gca gtg gag cag cgt      602
Glu Pro Val Pro Gly Gln Lys Gly Lys Lys Lys Ala Val Glu Gln Arg
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Asn Glu Ala Asp Leu Asp Glu Glu Leu Val Ile Lys Gly Ser Ile Leu	
172 177 182 187	
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Gln Lys His Pro Arg Ile Arg Phe His Thr Gly Leu Val Asp Ala His	
188 193 198 203	
ctc tac tgt ttg aaa aaa tac atc gtg gat ttc cta atg gaa aat ggg	794
Leu Tyr Cys Leu Lys Lys Tyr Ile Val Asp Phe Leu Met Glu Asn Gly	
204 209 214 219	
tca ata act tct atc cgg agt gaa ctg att cca tat tta gtg aga aaa	842
Ser Ile Thr Ser Ile Arg Ser Glu Leu Ile Pro Tyr Leu Val Arg Lys	
220 225 230 235	
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Gln Phe Ser Ser Ala Ser Ser Gln Gln Gly Thr Arg Lys Glu Lys Glu	
236 241 246 251	
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Gly Gly Ser Lys Gly Lys Arg Gly Leu Lys Ser Phe Arg Ile Ser Tyr	
252 257 262 267	
agt ttt tat taa aag gaagccaatt acactggaac cggggctccc tatggatggc	993
Ser Phe Tyr *	
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agt atg gag cat gta tcg cca gcg ctt cct gta ttc ctt gga tcg aca	228
Met Glu His Val Ser Pro Ala Leu Pro Val Phe Leu Gly Ser Thr	
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Tyr Thr Leu Cys Thr Leu Cys Pro Ile Val Pro Asp Gly Arg Leu Ile	
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Val Ser Cys Ser Glu Asp Lys Thr Ile Lys Ile Trp Asp Thr Thr Asn	
32 37 42 47	
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Lys Gln Cys Val Asn Asn Phe Ser Asp Ser Val Gly Phe Ala Asn Phe	
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Val Asp Phe Asn Pro Ser Gly Thr Cys Ile Ala Ser Ala Gly Ser Asp	
64 69 74 79	
caa act gtg aaa gtc tgg gat gta aga gtg aac aaa tta cta cag cat	468
Gln Thr Val Lys Val Trp Asp Val Arg Val Asn Lys Leu Leu Gln His	
80 85 90 95	
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Tyr Gln Val His Ser Gly Gly Val Asn Cys Ile Ser Phe His Pro Ser	
96 101 106 111	
ggt aac tat ctc atc aca gct tct tca gat ggt acc ctt aag att ctg	564
Gly Asn Tyr Leu Ile Thr Ala Ser Ser Asp Gly Thr Leu Lys Ile Leu	
112 117 122 127	
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Asp Leu Leu Glu Gly Arg Leu Ile Tyr Thr Leu Gln Gly His Thr Gly	
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160 165 170 175	
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Leu His Cys Lys Gly Leu Thr Lys Arg Asn Leu Lys Arg Leu His Phe	
176 181 186 191	
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His Glu Glu Lys Val Glu Thr Val Glu Ile Asn Pro Lys Leu Glu Val	
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Gly	Glu	Glu	Ala	Cys	Gly	Tyr	Phe	Leu	Asn	Pro	Ser	Leu	Met	Ser	Pro	
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Leu	Pro	Cys	Glu	Ser	Gln	Arg	Ser	Ile	Pro	Leu	Ala	Val	Thr	Asp	Ala	
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 Gln Asp Leu Thr Gly Ile Glu Ser Met Asp Gln Cys Arg His Thr Leu
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aga cct caa cca agg ggg ctg ctt gga tgg ggt tat tac ttg ata atg 343
 Arg Pro Gln Pro Arg Gly Leu Leu Gly Trp Gly Tyr Tyr Leu Ile Met
 85 90 95 100

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 Leu Pro Phe Arg Phe Thr Tyr Tyr Thr Ile Leu Asp Ile Phe Arg Phe
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Val Val Gly Arg Leu Glu Gly Leu Ile Gln Pro Asp Asp Leu Ile Asn	
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Met Gln Leu
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Trp Ile Pro Lys Asp Lys Ser Arg Thr Leu Met Thr Leu Lys Val Leu
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Asn Ala Val Ser Glu Thr Val Ala Thr Ser Thr Ala Gly Ile Pro Ser
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Ala Ala Thr Pro Ser Leu Leu Leu Ala Thr Ala Glu Met Ile Pro Ser
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aca gcc tgg att cct ttg gct ctc gct cgt cgg cag acg cct tca cca 368
Thr Ala Trp Ile Pro Leu Ala Leu Ala Arg Arg Gln Thr Pro Ser Pro
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116 121 126 131

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 Met Ser Ser Asp Leu Val
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 agc agg ctg cct acc att tat aga aat gca cat gac atc aag aat aag 401
 Ser Arg Leu Pro Thr Ile Tyr Arg Asn Ala His Asp Ile Lys Asn Lys
 7 12 17 22
 agc tct gcc ccc agc aga gtg cct cct ctt ttt gtc cca cag ggg act 449
 Ser Ser Ala Pro Ser Arg Val Pro Pro Leu Phe Val Pro Gln Gly Thr
 23 28 33 38
 tct gaa aga aaa gac agt tca ggt tct gtg tcc cca aac act ctt agc 497
 Ser Glu Arg Lys Asp Ser Ser Gly Ser Val Ser Pro Asn Thr Leu Ser
 39 44 49 54
 cag gag gag ggt gat cag atc tgt ttg tac cat atc cgg aaa agt tgt 545
 Gln Glu Glu Gly Asp Gln Ile Cys Leu Tyr His Ile Arg Lys Ser Cys
 55 60 65 70
 agc ttt caa gat aag tgc cat aga gtt cat ttc cat ttg ccg tat cga 593
 Ser Phe Gln Asp Lys Cys His Arg Val His Phe His Leu Pro Tyr Arg
 71 76 81 86
 /
 tgg caa ttc ttg gat aga ggc aaa tgg gag gat ttg gac aac atg gaa 641
 Trp Gln Phe Leu Asp Arg Gly Lys Trp Glu Asp Leu Asp Asn Met Glu

87	92	97	102	
ctt att gaa gag gca tat tgc aat ccc aaa ata gaa agg atc ctg tgc				689
Leu Ile Glu Glu Ala Tyr Cys Asn Pro Lys Ile Glu Arg Ile Leu Cys				
103	108	113	118	
tct gag tca gcc agt acc ttt cac tct cat tgt ctg aac ttt aac gcc				737
Ser Glu Ser Ala Ser Thr Phe His Ser His Cys Leu Asn Phe Asn Ala				
119	124	129	134	
atg act tac ggt gct acc cag gct cgc cgc ctc tcc acg gcc tcc tct				785
Met Thr Tyr Gly Ala Thr Gln Ala Arg Arg Leu Ser Thr Ala Ser Ser				
135	140	145	150	
gtc acc aaa cct cca cac ttc atc ctc acc act gac tgg att tgg tac				833
Val Thr Lys Pro Pro His Phe Ile Leu Thr Thr Asp Trp Ile Trp Tyr				
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tgg agt gat gag ttt ggt tct tgg cag gaa tat gga aga cag ggc acg				881
Trp Ser Asp Glu Phe Gly Ser Trp Gln Glu Tyr Gly Arg Gln Gly Thr				
167	172	177	182	
gtg cac cct gtg acc act gtc agc agt agc gac gtg gag aag gcc tac				929
Val His Pro Val Thr Thr Val Ser Ser Ser Asp Val Glu Lys Ala Tyr				
183	188	193	198	
ctg gcc tac tgt aca ccg ggg tct gac ggc cag gca gcc acc ttg aag				977
Leu Ala Tyr Cys Thr Pro Gly Ser Asp Gly Gln Ala Ala Thr Leu Lys				
199	204	209	214	
ttc cag gcc gga aag cac aac tac gag tta gat ttc aaa gcc ttc gtt				1025
Phe Gln Ala Gly Lys His Asn Tyr Glu Leu Asp Phe Lys Ala Phe Val				
215	220	225	230	
cag aaa aac ctg gtc tat ggc aca act aaa aag gtt tgc cgc aga ccc				1073
Gln Lys Asn Leu Val Tyr Gly Thr Thr Lys Lys Val Cys Arg Arg Pro				
231	236	241	246	
aaa tac gtg tct ccc cag gat gtg acg acc atg caa acc tgc aat acc				1121
Lys Tyr Val Ser Pro Gln Asp Val Thr Thr Met Gln Thr Cys Asn Thr				
247	252	257	262	
aag ttt cca ggc ccg aag agc atc cca gac tat tgg gac tcc tct gcc				1169
Lys Phe Pro Gly Pro Lys Ser Ile Pro Asp Tyr Trp Asp Ser Ser Ala				
263	268	273	278	
ctg cca gac cca ggc ttt cag aag atc acc ctt agt tct tcc tcg gaa				1217
Leu Pro Asp Pro Gly Phe Gln Lys Ile Thr Leu Ser Ser Ser Ser Glu				
279	284	289	294	
gag tat cag aag gtc tgg aac ctc ttt aac cgc acg ctg cct ttc tac				1265
Glu Tyr Gln Lys Val Trp Asn Leu Phe Asn Arg Thr Leu Pro Phe Tyr				
295	300	305	310	
ttt gtt cag aag att gag cga gta cag aac ctg gcc ctc tgg gaa gtc				1313
Phe Val Gln Lys Ile Glu Arg Val Gln Asn Leu Ala Leu Trp Glu Val				
311	316	321	326	

tac cag tgg caa aaa gga cag atg cag aag cag aac gga ggg aag gcc	1361
Tyr Gln Trp Gln Lys Gly Gln Met Gln Lys Gln Asn Gly Gly Lys Ala	
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gtg gac gag cgg cag ctg ttc cac ggc acc agc gcc att ttt gtg gac	1409
Val Asp Glu Arg Gln Leu Phe His Gly Thr Ser Ala Ile Phe Val Asp	
343 348 353 358	
gcc atc tgc cag cag aac ttt gac tgg cgg gtc tgt ggt gtt cat ggc	1457
Ala Ile Cys Gln Gln Asn Phe Asp Trp Arg Val Cys Gly Val His Gly	
359 364 369 374	
act tcc tac ggc aag ggg agc tac ttt gcc cga gat gct gca tat tcc	1505
Thr Ser Tyr Gly Lys Gly Ser Tyr Phe Ala Arg Asp Ala Ala Tyr Ser	
375 380 385 390	
cac cac tac agc aaa tcc gac acg cag acc cac acg atg ttc ctg gcc	1553
His His Tyr Ser Lys Ser Asp Thr Gln Thr His Thr Met Phe Leu Ala	
391 396 401 406	
cgg gtg ctg gtg ggc gag ttc gtc agg ggc aat gcc tcc ttt gtc cgt	1601
Arg Val Leu Val Gly Glu Phe Val Arg Gly Asn Ala Ser Phe Val Arg	
407 412 417 422	
ccg ccg gcc aag gag ggc tgg agc aac gcc ttc tat gat agc tgc gtg	1649
Pro Pro Ala Lys Glu Gly Trp Ser Asn Ala Phe Tyr Asp Ser Cys Val	
423 428 433 438	
aac agt gtg tcc gac ccc tcc atc ttt gtg atc ttt gag aaa cac cag	1697
Asn Ser Val Ser Asp Pro Ser Ile Phe Val Ile Phe Glu Lys His Gln	
439 444 449 454	
gtc tac cca gag tat gtc atc cag tac acc acc tcc tcc aag ccc tgc	1745
Val Tyr Pro Glu Tyr Val Ile Gln Tyr Thr Thr Ser Ser Lys Pro Ser	
455 460 465 470	
gtc aca ccc tcc atc ctg ctg gcc ttg ggc tcc ctg ttc agc agc cga	1793
Val Thr Pro Ser Ile Leu Leu Ala Leu Gly Ser Leu Phe Ser Ser Arg	
471 476 481 486	
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Gln *	
487	
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 gcttaciaaag actttattta ttttactgtc tttgaaggaa acgttcgcaa cgtttctgaa 180
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 cacaccagca ggacacaaat agtacatgtg aaatttccaa gcatt atg gtt tac 354
 Met Val Tyr
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aga gat gat tat ttc atc aga cat tcc atc tct gta tct gca gtg ata 402
 Arg Asp Asp Tyr Phe Ile Arg His Ser Ile Ser Val Ser Ala Val Ile
 4 9 14 19

gta cgc gcc tgg att act cac aaa tac agt ggc aga gac tgg aat gtt 450
 Val Arg Ala Trp Ile Thr His Lys Tyr Ser Gly Arg Asp Trp Asn Val
 20 25 30 35

aaa tgg gag gaa aac ttg ctc cat gct gta gca aag aat tat acc ctc 498
 Lys Trp Glu Glu Asn Leu Leu His Ala Val Ala Lys Asn Tyr Thr Leu
 36 41 46 51

ctg cag acc atc ccg cct ttt gaa cgc cct ttc aaa gat cat caa gtg 546
 Leu Gln Thr Ile Pro Pro Phe Glu Arg Pro Phe Lys Asp His Gln Val
 52 57 62 67

tgc ctt gag tgg aac atg ggt tat att tgg aac ctt cgg gca aac agg	594
Cys Leu Glu Trp Asn Met Gly Tyr Ile Trp Asn Leu Arg Ala Asn Arg	
68 73 78 83	
att cca cag tgt cct ctg gaa aat gat gtg gtt gcc ctg ctt ggc ttt	642
Ile Pro Gln Cys Pro Leu Glu Asn Asp Val Val Ala Leu Leu Gly Phe	
84 89 94 99	
cct tat gcc tcc agt gga gaa aac aca ggc att gtc aag aag ttc ccg	690
Pro Tyr Ala Ser Ser Gly Glu Asn Thr Gly Ile Val Lys Lys Phe Pro	
100 105 110 115	
agg ttt cgg aac cga gag ctg gag gcc act cga cgc cag agg atg gat	738
Arg Phe Arg Asn Arg Glu Leu Glu Ala Thr Arg Arg Gln Arg Met Asp	
116 121 126 131	
tac cca gtg ttt act gtt tca ttg tgg ctt tat tta ctc cat tat tgc	786
Tyr Pro Val Phe Thr Val Ser Leu Trp Leu Tyr Leu Leu His Tyr Cys	
132 137 142 147	
aag gcc aac ctc tgt ggg att ctg tac ttt gtt gac tct aat gag atg	834
Lys Ala Asn Leu Cys Gly Ile Leu Tyr Phe Val Asp Ser Asn Glu Met	
148 153 158 163	
tac ggc aca cct tct gta ttt ctt acg gaa gag ggc tat ttg cat att	882
Tyr Gly Thr Pro Ser Val Phe Leu Thr Glu Glu Gly Tyr Leu His Ile	
164 169 174 179	
cag atg cat ctt gtc aaa ggg gaa gac ctt gct gta aaa act aaa ttc	930
Gln Met His Leu Val Lys Gly Glu Asp Leu Ala Val Lys Thr Lys Phe	
180 185 190 195	
atc ata cct ttg aag gag tgg ttt cga ctg gat atc tct ttt aac gga	978
Ile Ile Pro Leu Lys Glu Trp Phe Arg Leu Asp Ile Ser Phe Asn Gly	
196 201 206 211	
ggc cag ata gta gta acc act agc att gga cag gat ttg aaa agc tac	1026
Gly Gln Ile Val Val Thr Thr Ser Ile Gly Gln Asp Leu Lys Ser Tyr	
212 217 222 227	
cac aat cag acc att agc ttc cgg gag gat ttc cat tat aat gac aca	1074
His Asn Gln Thr Ile Ser Phe Arg Glu Asp Phe His Tyr Asn Asp Thr	
228 233 238 243	
gct ggg tac ttc att att gga ggg agc agg tat gtg gct ggc att gaa	1122
Ala Gly Tyr Phe Ile Ile Gly Gly Ser Arg Tyr Val Ala Gly Ile Glu	
244 249 254 259	
ggg ttt ttt gga ccc ctg aag tac tat cgc ctt cgc agt ctg cac tca	1170
Gly Phe Phe Gly Pro Leu Lys Tyr Tyr Arg Leu Arg Ser Leu His Ser	
260 265 270 275	
gcc ctg att ttt aat ccc ctc ctt gag aag caa ctt gct gaa caa atc	1218
Ala Leu Ile Phe Asn Pro Leu Leu Glu Lys Gln Leu Ala Glu Gln Ile	
276 281 286 291	
aag tta tat tat gaa agg tgt gct gag gtt caa gaa ata gta tct gtg	1266

Lys	Leu	Tyr	Tyr	Glu	Arg	Cys	Ala	Glu	Val	Gln	Glu	Ile	Val	Ser	Val		
292					297					302					307		
tat	gca	tct	gca	gca	aag	cac	ggg	ggc	gag	aga	caa	gaa	gca	tgc	cac		1314
Tyr	Ala	Ser	Ala	Ala	Lys	His	Gly	Gly	Glu	Arg	Gln	Glu	Ala	Cys	His		
308					313					318					323		
ctc	cac	aac	tcc	tac	ctg	gac	ctc	cag	cgc	agg	tat	ggg	aga	ccc	tgc		1362
Leu	His	Asn	Ser	Tyr	Leu	Asp	Leu	Gln	Arg	Arg	Tyr	Gly	Arg	Pro	Ser		
324					329					334					339		
atg	tgc	aga	gcc	ttc	ccc	tgg	gag	aag	gag	ctg	aaa	gac	aaa	cac	ccc		1410
Met	Cys	Arg	Ala	Phe	Pro	Trp	Glu	Lys	Glu	Leu	Lys	Asp	Lys	His	Pro		
340					345					350					355		
agc	ttg	ttc	cag	gca	ttg	ctg	gag	atg	gat	ctg	ctg	acc	gtg	cca	agg		1458
Ser	Leu	Phe	Gln	Ala	Leu	Leu	Glu	Met	Asp	Leu	Leu	Thr	Val	Pro	Arg		
356					361					366					371		
aac	caa	aat	gaa	tct	gta	tca	gaa	atc	ggt	ggg	aag	ata	ttt	gag	aag		1506
Asn	Gln	Asn	Glu	Ser	Val	Ser	Glu	Ile	Gly	Gly	Lys	Ile	Phe	Glu	Lys		
372					377					382					387		
gct	gta	aag	aga	ctc	tct	agc	att	gat	ggt	ctt	cac	caa	att	agc	tct		1554
Ala	Val	Lys	Arg	Leu	Ser	Ser	Ile	Asp	Gly	Leu	His	Gln	Ile	Ser	Ser		
388					393					398					403		
atc	gtc	ccc	ttt	ctg	acg	gat	tcc	agc	tgc	tgt	gga	tac	cat	aaa	gca		1602
Ile	Val	Pro	Phe	Leu	Thr	Asp	Ser	Ser	Cys	Cys	Gly	Tyr	His	Lys	Ala		
404					409					414					419		
tcc	tac	tac	ctt	gca	gtc	ttt	tat	gag	act	gga	tta	aat	gtt	cct	cgg		1650
Ser	Tyr	Tyr	Leu	Ala	Val	Phe	Tyr	Glu	Thr	Gly	Leu	Asn	Val	Pro	Arg		
420					425					430					435		
gat	cag	ctg	cag	ggc	atg	ttg	tat	agt	ttg	gtt	gga	ggc	cag	ggg	agt		1698
Asp	Gln	Leu	Gln	Gly	Met	Leu	Tyr	Ser	Leu	Val	Gly	Gly	Gln	Gly	Ser		
436					441					446					451		
gag	agg	ctg	tct	tca	atg	aat	ctt	ggg	tat	aaa	cac	tac	cag	ggt	att		1746
Glu	Arg	Leu	Ser	Ser	Met	Asn	Leu	Gly	Tyr	Lys	His	Tyr	Gln	Gly	Ile		
452					457					462					467		
gac	aac	tac	ccc	ctg	gac	tgg	gaa	ctg	tgc	tat	gcc	tac	tac	agc	aac		1794
Asp	Asn	Tyr	Pro	Leu	Asp	Trp	Glu	Leu	Ser	Tyr	Ala	Tyr	Tyr	Ser	Asn		
468					473					478					483		
att	gcc	acc	aag	aca	ccc	ctt	gac	cag	cac	aca	ctg	caa	gga	gat	cag		1842
Ile	Ala	Thr	Lys	Thr	Pro	Leu	Asp	Gln	His	Thr	Leu	Gln	Gly	Asp	Gln		
484					489					494					499		
gca	tat	gtt	gaa	aca	att	aga	cta	aaa	gat	gat	gaa	ata	ctc	aag	gta		1890
Ala	Tyr	Val	Glu	Thr	Ile	Arg	Leu	Lys	Asp	Asp	Glu	Ile	Leu	Lys	Val		
500					505					510					515		
caa	acc	aaa	gaa	gat	gga	gat	gtc	ttt	atg	tgg	ttg	aag	cat	gaa	gct		1938
Gln	Thr	Lys	Glu	Asp	Gly	Asp	Val	Phe	Met	Trp	Leu	Lys	His	Glu	Ala		

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acc cga ggc aat gca	gca gct cag caa cga	ttg gcc cag atg ctg	ttc	1986
Thr Arg Gly Asn Ala	Ala Ala Gln Gln Arg	Leu Ala Gln Met Leu	Phe	
532	537	542	547	
tgg ggg cag caa ggt	gtg gcc aag aat ccc	gaa gca gca att gag	tgg	2034
Trp Gly Gln Gln Gly	Val Ala Lys Asn Pro	Glu Ala Ala Ile Glu	Trp	
548	553	558	563	
tac gcc aag ggc gcc	ctg gag acg gag gat	cct gcg tta atc tat	gac	2082
Tyr Ala Lys Gly Ala	Leu Glu Thr Glu Asp	Pro Ala Leu Ile Tyr	Asp	
564	569	574	579	
tat gcc att gtg cta	ttc aag ggt caa gga	gta aaa aag aac aga	cgg	2130
Tyr Ala Ile Val Leu	Phe Lys Gly Gln Gly	Val Lys Lys Asn Arg	Arg	
580	585	590	595	
ctt gcc tta gag ctg	atg aag aaa gca gct	tcc aag gga ttg cat	cag	2178
Leu Ala Leu Glu Leu	Met Lys Lys Ala Ala	Ser Lys Gly Leu His	Gln	
596	601	606	611	
gca gtc aat ggc ctg	gga tgg tat tac cac	aaa ttc aag aaa aat	tac	2226
Ala Val Asn Gly Leu	Gly Trp Tyr Tyr His	Lys Phe Lys Lys Asn	Tyr	
612	617	622	627	
gcc aaa gca gca aag	tac tgg tta aaa gca	gaa gaa atg ggg aac	cca	2274
Ala Lys Ala Ala Lys	Tyr Trp Leu Lys Ala	Glu Glu Met Gly Asn	Pro	
628	633	638	643	
gat gcg tca tac aat	ctt gga gtc ctg cat	ttg gat ggc atc ttc	cct	2322
Asp Ala Ser Tyr Asn	Leu Gly Val Leu His	Leu Asp Gly Ile Phe	Pro	
644	649	654	659	
gga gtt cct gga agg	aat caa act tta gct	ggt gaa tat ttc cat	aag	2370
Gly Val Pro Gly Arg	Asn Gln Thr Leu Ala	Gly Glu Tyr Phe His	Lys	
660	665	670	675	
gct gcg caa ggt gga	cac atg gaa ggg acc	ttg tgg tgt tct ctc	tac	2418
Ala Ala Gln Gly Gly	His Met Glu Gly Thr	Leu Trp Cys Ser Leu	Tyr	
676	681	686	691	
tat atc aca ggc aac	ctg gag aca ttc cct	aga gat cct gag aaa	gct	2466
Tyr Ile Thr Gly Asn	Leu Glu Thr Phe Pro	Arg Asp Pro Glu Lys	Ala	
692	697	702	707	
gtt gta tgg gca aaa	cat gta gct gag aaa	aat ggc tac ttg ggc	cat	2514
Val Val Trp Ala Lys	His Val Ala Glu Lys	Asn Gly Tyr Leu Gly	His	
708	713	718	723	
gtc atc cgc aaa ggc	ctc aat gcc tac ctg	gaa ggt tca tgg cat	gaa	2562
Val Ile Arg Lys Gly	Leu Asn Ala Tyr Leu	Glu Gly Ser Trp His	Glu	
724	729	734	739	
gct ttg ctg tat tat	gtt tta gca gca gaa	act gga att gaa gtg	tca	2610
Ala Leu Leu Tyr Tyr	Val Leu Ala Ala Glu	Thr Gly Ile Glu Val	Ser	
740	745	750	755	

cag aca aat tta gca cac atc tgt gag gag agg cca gac ctg gcc agg	2658
Gln Thr Asn Leu Ala His Ile Cys Glu Glu Arg Pro Asp Leu Ala Arg	
756 761 766 771	
aga tac ttg ggt gtt aac tgt gtt tgg aga tac tat aat ttc tct gtt	2706
Arg Tyr Leu Gly Val Asn Cys Val Trp Arg Tyr Tyr Asn Phe Ser Val	
772 777 782 787	
ttt caa atc gat gct cct tcc ttt gca tat ttg aag atg gga gac ctt	2754
Phe Gln Ile Asp Ala Pro Ser Phe Ala Tyr Leu Lys Met Gly Asp Leu	
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Tyr Tyr Tyr Gly His Gln Asn Gln Ser Gln Asp Leu Glu Leu Ser Val	
804 809 814 819	
cag atg tac gcc caa gcc gcc ctg gat gga gac tcc cag gga ttt ttt	2850
Gln Met Tyr Ala Gln Ala Ala Leu Asp Gly Asp Ser Gln Gly Phe Phe	
820 825 830 835	
aac ctg gcc ctg cta atc gag gaa ggt acg ata atc cca cac cat atc	2898
Asn Leu Ala Leu Leu Ile Glu Glu Gly Thr Ile Ile Pro His His Ile	
836 841 846 851	
ttg gat ttc ttg gaa att gac tca act ctc cat tct aat aac atc tcc	2946
Leu Asp Phe Leu Glu Ile Asp Ser Thr Leu His Ser Asn Asn Ile Ser	
852 857 862 867	
att ctc cag gaa ctg tac gaa agg tgc tgg agc cac agt aac gag gag	2994
Ile Leu Gln Glu Leu Tyr Glu Arg Cys Trp Ser His Ser Asn Glu Glu	
868 873 878 883	
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Ser Phe Ser Pro Cys Ser Leu Ala Trp Leu Tyr Leu His Leu Arg Leu	
884 889 894 899	
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Leu Trp Gly Ala Ile Leu His Ser Ala Leu Ile Tyr Phe Leu Gly Thr	
900 905 910 915	
ttt ctg cta tcc ata ttg atc gcc tgg act gtg cag tat ttc cag tct	3138
Phe Leu Leu Ser Ile Leu Ile Ala Trp Thr Val Gln Tyr Phe Gln Ser	
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Pro Leu Pro Asp Gln Gln Pro Cys Ile Glu Pro Pro Pro Ser Ser Leu		
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Leu Tyr Gln Pro Asn Phe Asn Thr Asn Phe Glu Asp Arg Asn Ala Phe		
37 42 47 52		
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Val Thr Gly Ile Ala Arg Tyr Ile Glu Gln Ala Thr Val His Ser Ser		
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Met Asn Glu Met Leu Glu Glu Gly Gln Glu Tyr Ala Val Met Leu Tyr		
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Thr Trp Arg Ser Cys Ser Arg Ala Ile Pro Gln Val Lys Cys Asn Glu		
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Gln Pro Asn Arg Val Glu Ile Tyr Glu Lys Thr Val Glu Val Leu Glu		
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cct gag gtc aca aaa ctg atg aat ttc atg tac ttc cag aga aat gcc		677
Pro Glu Val Thr Lys Leu Met Asn Phe Met Tyr Phe Gln Arg Asn Ala		
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Ile Glu Arg Phe Cys Gly Glu Val Arg Arg Leu Cys His Ala Glu Arg		
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Arg Lys Asp Phe Val Ser Glu Ala Tyr Leu Ile Thr Leu Gly Lys Phe		
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Lys Met Ala Asp Pro Gln Ser Ile Gln Glu Ser Gln Asn Leu Ser Met		
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Glu Val Ile Ser Gly Tyr Glu Glu Leu Leu Ala Asp Ile Val Asn Leu
229 234 239 244

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Cys Val Asp Tyr Tyr Glu Asn Arg Met Tyr Leu Thr Pro Ser Glu Lys
245 250 255 260

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His Met Leu Leu Lys Val Met Gly Phe Gly Leu Tyr Leu Met Asp Gly
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277 282 287 292

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309 314 319 324

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Tyr Glu Glu Asn Lys Ser Arg Trp Thr Cys Thr Ser Ser Gly Ser Ser
325 330 335 340

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Pro Gln Tyr Asn Ile Cys Glu Gln Met Ile Gln Ile Arg Glu Asp His
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atg cgc ttc att tcg gag ctg gcg cgc tac agc aac agc gag gtg gtc 1397
Met Arg Phe Ile Ser Glu Leu Ala Arg Tyr Ser Asn Ser Glu Val Val
357 362 367 372

acg ggc tcg ggc cgc cag gag gcc cag aag acg gac gcg gag tac cgc 1445
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Lys Leu Phe Asp Leu Ala Leu Gln Gly Leu Gln Leu Leu Ser Gln Trp
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Ser Ala His Val Met Glu Val Tyr Ser Trp Lys Leu Val His Pro Thr
405 410 415 420

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Asp Lys Tyr Ser Asn Lys Asp Cys Pro Asp Ser Ala Glu Glu Tyr Glu
421 426 431 436

cgt gcc acg cgc tac aac tac acc agc gag gag aag ttt gcc cta gtg 1637
Arg Ala Thr Arg Tyr Asn Tyr Thr Ser Glu Glu Lys Phe Ala Leu Val

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Glu Val Ile Ala Met Ile Lys Gly Leu Gln Val Leu Met Gly Arg Met				
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Glu Ser Val Phe Asn His Ala Ile Arg His Thr Val Tyr Ala Ala Leu				
469	474	479	484	
cag gac ttc tcc cag gtg acc ctt agg gag ccg ctg cgg cag gcc atc				1781
Gln Asp Phe Ser Gln Val Thr Leu Arg Glu Pro Leu Arg Gln Ala Ile				
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Lys Lys Lys Lys Asn Val Ile Gln Ser Val Leu Gln Ala Ile Arg Lys				
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acc gtg tgt gac tgg gag acg ggg cat gag ccc ttc aat gac cca gcc				1877
Thr Val Cys Asp Trp Glu Thr Gly His Glu Pro Phe Asn Asp Pro Ala				
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Leu Arg Gly Glu Lys Asp Pro Lys Ser Gly Phe Asp Ile Lys Val Pro				
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cgc cgc gcc gtg gga ccc tcc agc act cag ctt tac atg gtg aga acc				1973
Arg Arg Ala Val Gly Pro Ser Ser Thr Gln Leu Tyr Met Val Arg Thr				
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atg cta gag tcc ctc att gca gac aaa agt ggt tcc aag aaa acc ttg				2021
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Arg Ser Ser Leu Glu Gly Pro Thr Ile Leu Asp Ile Glu Lys Phe His				
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Arg Glu Ser Phe Phe Tyr Thr His Leu Ile Asn Phe Ser Glu Thr Leu				
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Gln Gln Cys Cys Asp Leu Ser Gln Leu Trp Phe Arg Glu Phe Phe Leu				
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Glu Leu Thr Met Gly Arg Arg Ile Gln Phe Pro Ile Glu Met Ser Met				
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693 698 703 708	
cag ata ttt gcc tat tat aag gtt atg gca gga agt ttg ctt ctt gat	2453
Gln Ile Phe Ala Tyr Tyr Lys Val Met Ala Gly Ser Leu Leu Leu Asp	
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Lys Arg Leu Arg Ser Glu Cys Lys Asn Gln Gly Ala Thr Ile His Leu	
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Leu Leu Gly Arg Ser Ile Asp Leu Asn Arg Leu Ile Thr Gln Arg Val	
757 762 767 772	
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Ser Glu Asp Leu Thr Ser Ile Val Glu Leu Asp Gly Leu Leu Glu Ile	
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 Met Ala
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 Lys Phe Pro Glu Val Pro Glu Val Val Val Ser Arg Cys Met Leu Gln
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 Gly Ile Ser Gly Leu Arg Asn His Met Thr Ser Leu Asn Leu Asp Leu
 67 72 77 82

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 83 88 93 98

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 Gly Ser Arg Thr Leu Thr His Ser Ile Ser Asp Gly Gln Leu Gln Gly
 99 104 109 114

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 115 120 125 130

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Gly Thr Ser Ser Leu Ser Gln Gln Thr Pro Arg Phe Asn Pro Ile Met				
163	168	173	178	
gta act tta gcc cca aat atc cag act ggt cgt aat act cct aca tct				811
Val Thr Leu Ala Pro Asn Ile Gln Thr Gly Arg Asn Thr Pro Thr Ser				
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Leu His Ile His Gly Val Pro Pro Pro Val Leu Asn Ser Pro Gln Gly				
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Asn Ser Ile Tyr Ile Arg Pro Tyr Ile Thr Thr Pro Gly Gly Thr Thr				
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Val Asn Ser Gln Thr Leu Asn Arg Asn Gln Pro Thr Val Tyr Ile Ala				
355	360	365	370	
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Ala Ser Pro Pro Asn Thr Asp Glu Leu Met Ser Arg Ser Gln Pro Lys				
371	376	381	386	

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Ser Arg Asn Met Ser Gly Gln Val Ser Met Gly Pro Ala Phe Ile His	
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Pro Arg Val Val Val Thr Gln Pro Asn Thr Lys Tyr Thr Phe Lys Ile	
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Thr Val Ser Pro Asn Lys Pro Pro Ala Val Ser Pro Gly Val Val Ser	
467 472 477 482	
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Pro Thr Phe Glu Leu Thr Asn Leu Leu Asn His Pro Asp His Tyr Val	
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Glu Thr Glu Asn Ile Gln His Leu Thr Asp Pro Thr Leu Ala His Val	
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Asp Arg Ile Ser Glu Thr Arg Lys Leu Ser Met Gly Ser Asp Asp Ala	
515 520 525 530	
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Ala Tyr Thr Gln Ala Leu Leu Val His Gln Lys Ala Arg Met Glu Arg	
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Ser Glu Val Asn Glu Met Glu Asn Asn Leu Thr Arg Arg Arg Leu Lys	
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Leu Arg Ser Cys Asn Arg Gln Leu Gln Ile Asp Ile Asp Cys Leu Thr	
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Lys Glu Ile Asp Leu Phe Gln Ala Arg Gly Pro His Phe Asn Pro Ser	
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Ala Ile His Asn Phe Tyr Asp Asn Ile Gly Phe Val Gly Pro Val Pro	
627 632 637 642	
cca aaa ccc aaa gat caa agg tcc atc atc aaa aca cca aag act caa	2203
Pro Lys Pro Lys Asp Gln Arg Ser Ile Ile Lys Thr Pro Lys Thr Gln	
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Asp Thr Glu Asp Asp Glu Gly Ala Gln Trp Asn Cys Thr Ala Cys Thr	
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Arg His Phe *	
691	
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tgtttgtctt ccacaggga gcttaaaaca aaagatattt ttaaccact gacagaacaa	3374

Met Cys Gly Ile Cys Cys

1

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Ser Val Asn Phe Ser Ala Glu His Phe Ser Gln Asp Leu Lys Glu Asp	
7 12 17 22	
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Leu Leu Tyr Asn Leu Lys Gln Arg Gly Pro Asn Ser Ser Lys Gln Leu	
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tta aag tct gat gtt aac tac cag tgt tta ttt tct gct cac gtc cta	559
Leu Lys Ser Asp Val Asn Tyr Gln Cys Leu Phe Ser Ala His Val Leu	
39 44 49 54	
cac ttg agg ggt gtt ttg act acc cag cct gtg gaa gat gaa aga ggc	607
His Leu Arg Gly Val Leu Thr Thr Gln Pro Val Glu Asp Glu Arg Gly	
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Asn Val Phe Leu Trp Asn Gly Glu Ile Phe Ser Gly Ile Lys Val Glu	
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gct gaa gag aat gac act caa att ttg ttt aat tat ctt tcc tcc tgt	703
Ala Glu Glu Asn Asp Thr Gln Ile Leu Phe Asn Tyr Leu Ser Ser Cys	
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Lys Asn Glu Ser Glu Ile Leu Ser Leu Phe Ser Glu Val Gln Gly Pro	
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Trp Ser Phe Ile Tyr Tyr Gln Ala Ser Ser His Tyr Leu Trp Phe Gly	
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Arg Asp Phe Phe Gly Arg Arg Ser Leu Leu Trp His Phe Ser Asn Leu	
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Gly Lys Ser Phe Cys Leu Ser Ser Val Gly Thr Gln Thr Ser Gly Leu	
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Leu Lys Ser Thr Val Ile Ser Arg Cys Ile Ile Leu Gln Leu Tyr Pro	
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Asn Glu Ala Lys Leu Tyr Leu Glu Lys Pro Val Val Pro Leu Asn Met				
231	236	241	246	
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Met Leu Pro Gln Ala Ala Leu Glu Thr His Cys Ser Asn Ile Ser Asn				
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gtg cca cct aca aga gag ata ctt caa gtc ttt ctt act gat gta cac				1231
Val Pro Pro Thr Arg Glu Ile Leu Gln Val Phe Leu Thr Asp Val His				
263	268	273	278	
atg aag gaa gta att cag cag ttc att gat gtc ctg agt gta gca gtc				1279
Met Lys Glu Val Ile Gln Gln Phe Ile Asp Val Leu Ser Val Ala Val				
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Lys Lys Arg Val Leu Cys Leu Pro Arg Asp Glu Asn Leu Thr Ala Asn				
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Ser Gly Gly Ile Asp Ser Met Val Ile Ala Thr Leu Ala Asp Arg His				
327	332	337	342	
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Ile Pro Leu Asp Glu Pro Ile Asp Leu Leu Asn Val Ala Phe Ile Ala				
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gaa gaa aag acc atg cca act acc ttt aac aga gaa ggg aat aaa cag				1519
Glu Glu Lys Thr Met Pro Thr Thr Phe Asn Arg Glu Gly Asn Lys Gln				
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Lys Asn Lys Cys Glu Ile Pro Ser Glu Glu Phe Ser Lys Asp Val Ala				
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Ala Ala Ala Ala Asp Ser Pro Asn Lys His Val Ser Val Pro Asp Arg				
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atc aca gga agg gcg gga cta aag gaa cta caa gct gtt agc cct tcc				1663
Ile Thr Gly Arg Ala Gly Leu Lys Glu Leu Gln Ala Val Ser Pro Ser				
407	412	417	422	
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Arg Ile Trp Asn Phe Val Glu Ile Asn Val Ser Met Glu Glu Leu Gln				
423	428	433	438	
aaa tta aga aga act cga ata tgt cac tta att cgg cca ttg gat aca				1759
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Ile Gly Trp Leu Val Ala Gln Glu Gly Val Lys Ser Tyr Gln Ser Asn	
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Gly Arg Asp Asp Arg Val Ile Gly Asp His Gly Lys Glu Ala Arg Phe	
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 Met Ile Leu Lys Leu Pro
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 Trp Arg Arg Lys Tyr Thr Leu Phe Ser Ala Ser Ser Glu Gly Gln Asn
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 His Ser Arg Ile Val Phe Asn Leu Cys Pro Leu Gln Thr Glu Asp Asp
 71 76 81 86

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Lys Gln Leu Leu Leu Ser Thr Ser Met Asp Arg Asp Val Lys Cys Trp	
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Asp Ile Ala Thr Leu Glu Cys Ser Trp Thr Leu Pro Ser Leu Gly Gly	
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Phe Ala Tyr Ser Leu Ala Phe Ser Ser Val Asp Ile Gly Ser Leu Ala	
119 124 129 134	
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Ile Gly Val Gly Asp Gly Met Ile Arg Val Trp Asn Thr Leu Ser Ile	
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Lys Asn Asn Tyr Asp Val Lys Asn Phe Trp Gln Gly Val Lys Ser Lys	
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Val Thr Ala Leu Cys Trp His Pro Thr Lys Glu Gly Cys Leu Ala Phe	
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Gly Thr Asp Asp Gly Lys Val Gly Leu Tyr Asp Thr Tyr Ser Asn Lys	
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Pro Pro Gln Ile Ser Ser Thr Tyr His Lys Lys Thr Val Tyr Thr Leu	
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Arg Pro Ser Leu Ala Leu Tyr Ser Cys Gly Gly Glu Gly Ile Val Leu	
231 236 241 246	
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Gln His Asn Pro Trp Lys Leu Ser Gly Glu Ala Phe Asp Ile Asn Lys	
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263 268 273 278	
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Asp Gly Ser Ile Glu Ile Phe Gln Ile Pro Asn Leu Lys Leu Ile Cys	
295 300 305 310	
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Glu	His	Gly	Ser	Gln	Pro	Glu	Leu	Ser	Tyr	Leu	Met	Ala	Ser	Gly	Ser	
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aac	aat	gca	gtc	att	tac	gtg	cac	aac	ctg	aag	act	gtc	ata	gag	agc	1528
Asn	Asn	Ala	Val	Ile	Tyr	Val	His	Asn	Leu	Lys	Thr	Val	Ile	Glu	Ser	
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agc	cct	gag	tct	cca	gtg	acc	att	aca	gag	ccc	tac	cgg	acc	ctc	tca	1576
Ser	Pro	Glu	Ser	Pro	Val	Thr	Ile	Thr	Glu	Pro	Tyr	Arg	Thr	Leu	Ser	
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Gly	His	Thr	Ala	Lys	Ile	Thr	Ser	Val	Ala	Trp	Ser	Pro	His	His	Asp	
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Gly	Arg	Leu	Val	Ser	Ala	Ser	Tyr	Asp	Gly	Thr	Ala	Gln	Val	Trp	Asp	
391					396					401					406	
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Ala	Leu	Arg	Glu	Glu	Pro	Leu	Cys	Asn	Phe	Arg	Gly	His	Gln	Gly	Arg	
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His	Ser	Arg	Pro	Pro	Gln	Gly	Lys	Lys	Ser	Ile	Glu	Leu	Glu	Lys	Lys	
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Ser	Met	Lys	Glu	Asn	Ser	Gly	Pro	Val	Glu	Asn	Gly	Val	Ser	Asp	Gln	
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Pro	Ala	Val	Ser	Arg	Glu	Pro	Val	Ile	Cys	Thr	Pro	Val	Ser	Ser	Gly	

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567	572	577	582	
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Ala Arg Ser Leu Leu Pro Leu Ser Thr Ser Leu Asp His Arg Ser Lys				
583	588	593	598	
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Glu Glu Leu His Gln Asp Cys Leu Val Leu Ala Thr Ala Lys His Ser				
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Arg Glu Leu Asn Glu Asp Val Ser Ala Asp Val Glu Glu Arg Phe His				
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Glu Arg Gly Glu Leu Thr Asp Asn Leu Val Ala Met Ala Pro Ala Ala				
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His Lys Val Tyr Glu Ala Val Glu Leu Leu Lys Ser Asn His Phe Tyr				
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Arg Glu Ala Ile Ala Ile Ala Lys Ala Arg Leu Arg Pro Glu Asp Pro				
743	748	753	758	
gtc ctg aag gac ttg tac ctc agc tgg gga acc gtc cta gaa aga gat				2776
Val Leu Lys Asp Leu Tyr Leu Ser Trp Gly Thr Val Leu Glu Arg Asp				
759	764	769	774	

ggc cac tat gct gta gct gcc aaa tgc tat tta ggg gcc act tgt gct	2824
Gly His Tyr Ala Val Ala Ala Lys Cys Tyr Leu Gly Ala Thr Cys Ala	
775 780 785 790	
tat gat gca gcc aaa gtt ttg gcc aaa aag ggg gat gcg gca tca ctt	2872
Tyr Asp Ala Ala Lys Val Leu Ala Lys Lys Gly Asp Ala Ala Ser Leu	
791 796 801 806	
aga acg gct gca gag ttg gct gcc atc gta gga gag gat gag ttg tct	2920
Arg Thr Ala Ala Glu Leu Ala Ala Ile Val Gly Glu Asp Glu Leu Ser	
807 812 817 822	
gct tcc ctg gct ctc aga tgt gcc caa gag ctg ctt ctg gcc aac aac	2968
Ala Ser Leu Ala Leu Arg Cys Ala Gln Glu Leu Leu Ala Asn Asn	
823 828 833 838	
tgg gtg gga gcc cag gaa gcc ctg cag ctg cat gaa agt cta cag ggt	3016
Trp Val Gly Ala Gln Glu Ala Leu Gln Leu His Glu Ser Leu Gln Gly	
839 844 849 854	
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Gln Arg Leu Val Phe Cys Leu Leu Glu Leu Leu Ser Arg His Leu Glu	
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gaa aag cag ctt tca gag ggc aaa agc tcc tcc tct tac cac act tgg	3112
Glu Lys Gln Leu Ser Glu Gly Lys Ser Ser Ser Ser Tyr His Thr Trp	
871 876 881 886	
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Asn Thr Gly Thr Glu Gly Pro Phe Val Glu Arg Val Thr Ala Val Trp	
887 892 897 902	
aag agc atc ttc agc ctt gac acc cct gag cag tat cag gaa gcc ttt	3208
Lys Ser Ile Phe Ser Leu Asp Thr Pro Glu Gln Tyr Gln Glu Ala Phe	
903 908 913 918	
cag aag ctg cag aac atc aag tac cca tct gct aca aat aac aca cct	3256
Gln Lys Leu Gln Asn Ile Lys Tyr Pro Ser Ala Thr Asn Asn Thr Pro	
919 924 929 934	
gcc aaa cag ctc ctg ctt cac att tgc cat gac ttg acc ctg gca gtg	3304
Ala Lys Gln Leu Leu Leu His Ile Cys His Asp Leu Thr Leu Ala Val	
935 940 945 950	
ctg agc caa cag atg gcc tcc tgg gac gag gct gtg cag gcg ctc ctt	3352
Leu Ser Gln Gln Met Ala Ser Trp Asp Glu Ala Val Gln Ala Leu Leu	
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Arg Ala Val Val Arg Ser Tyr Asp Ser Gly Ser Phe Thr Ile Met Gln	
967 972 977 982	
gaa gtg tac tca gcc ttt ctc cct gat ggc tgt gac cac cta aga gac	3448
Glu Val Tyr Ser Ala Phe Leu Pro Asp Gly Cys Asp His Leu Arg Asp	
983 988 993 998	

aag ttg ggg gac cat caa tcc cct gcc aca cca gct ttc aaa agt ttg	3496
Lys Leu Gly Asp His Gln Ser Pro Ala Thr Pro Ala Phe Lys Ser Leu	
999 1004 1009 1014	
gag gcc ttt ttt ctt tat ggg cgt ctg tat gaa ttc tgg tgg tct ctc	3544
Glu Ala Phe Phe Leu Tyr Gly Arg Leu Tyr Glu Phe Trp Trp Ser Leu	
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tcc aga cct tgc cca aat tcc agt gtc tgg gta agg gct ggt cac aga	3592
Ser Arg Pro Cys Pro Asn Ser Ser Val Trp Val Arg Ala Gly His Arg	
1031 1036 1041 1046	
aca ctc tct gtt gag cca agc cag cag tta gac act gcc agc act gaa	3640
Thr Leu Ser Val Glu Pro Ser Gln Gln Leu Asp Thr Ala Ser Thr Glu	
1047 1052 1057 1062	
gaa acg gac cct gaa act tct cag cca gag cca aac agg cct tca gaa	3688
Glu Thr Asp Pro Glu Thr Ser Gln Pro Glu Pro Asn Arg Pro Ser Glu	
1063 1068 1073 1078	
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Leu Asp Leu Arg Leu Thr Glu Glu Gly Glu Arg Met Leu Ser Thr Phe	
1079 1084 1089 1094	
aag gag ctc ttt tca gaa aag cat gcc agt ctc caa aac tca cag aga	3784
Lys Glu Leu Phe Ser Glu Lys His Ala Ser Leu Gln Asn Ser Gln Arg	
1095 1100 1105 1110	
act gtt gct gaa gtc caa gag acc ttg gca gaa atg atc cga caa cac	3832
Thr Val Ala Glu Val Gln Glu Thr Leu Ala Glu Met Ile Arg Gln His	
1111 1116 1121 1126	
caa aag agt caa ctc tgt aaa tcc aca gca aat ggt cct gat aag aat	3880
Gln Lys Ser Gln Leu Cys Lys Ser Thr Ala Asn Gly Pro Asp Lys Asn	
1127 1132 1137 1142	
gaa ccg gaa gta gaa gca gag cag ccc ctc tgc agt tct cag agc cag	3928
Glu Pro Glu Val Glu Ala Glu Gln Pro Leu Cys Ser Ser Gln Ser Gln	
1143 1148 1153 1158	
tgt aaa gaa gaa aaa aat gag cca ctt tct ctg cct gag tta acc aaa	3976
Cys Lys Glu Glu Lys Asn Glu Pro Leu Ser Leu Pro Glu Leu Thr Lys	
1159 1164 1169 1174	
agg ctt acc gag gca aat cag aga atg gca aaa ttt cct gag agc att	4024
Arg Leu Thr Glu Ala Asn Gln Arg Met Ala Lys Phe Pro Glu Ser Ile	
1175 1180 1185 1190	
aag gcc tgg ccc ttc cca gat gtg ctg gag tgc tgc ctc gtc ctg ctt	4072
Lys Ala Trp Pro Phe Pro Asp Val Leu Glu Cys Cys Leu Val Leu Leu	
1191 1196 1201 1206	
ctc atc agg tcc cac ttt cct ggc tgt ctg gcc cag gaa atg cag cag	4120
Leu Ile Arg Ser His Phe Pro Gly Cys Leu Ala Gln Glu Met Gln Gln	
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Gln	Ala	Gln	Glu	Leu	Leu	Gln	Lys	Tyr	Gly	Asn	Thr	Lys	Thr	Tyr	Arg		
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aga	cac	tgc	cag	acc	ttc	tgt	atg	tga	at	ttt	cac	ac	ctt	ga	agaa	actg	4220
Arg	His	Cys	Gln	Thr	Phe	Cys	Met	*									
1239						1244											
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	Met	
	1	
ccc cac ttg ttg gtg act ttc agg gat gtg gcc att gac ttc tct cag		166

Pro	His	Leu	Leu	Val	Thr	Phe	Arg	Asp	Val	Ala	Ile	Asp	Phe	Ser	Gln	
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Glu	Glu	Trp	Glu	Cys	Leu	Asp	Pro	Ala	Gln	Arg	Asp	Leu	Tyr	Arg	Asp	
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Val	Met	Leu	Glu	Asn	Tyr	Ser	Asn	Leu	Ile	Ser	Leu	Asp	Leu	Glu	Ser	
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agt tgt gtg acc aaa aag tta tct cca gaa aag gaa att tat gaa atg																310
Ser	Cys	Val	Thr	Lys	Lys	Leu	Ser	Pro	Glu	Lys	Glu	Ile	Tyr	Glu	Met	
50					55					60					65	
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Glu	Ser	Leu	Gln	Trp	Glu	Asn	Met	Gly	Lys	Arg	Ile	Asn	His	His	Leu	
66					71					76					81	
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Ser	Ile	Gln	Trp	Ser	Trp	Arg	Gln	Tyr	Gly	Val	Gln	Arg	Gln	Leu	Arg	
82					87					92					97	
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Leu	*															
114																
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 Met Lys Met Thr Gly Asp Phe Glu Glu Cys Leu Lys Asp Ser Pro Arg
 1 5 10 15
 ttc agg gca gct ttg gaa gaa gta gaa ggt gat gtg gca gaa ttg gaa 156
 Phe Arg Ala Ala Leu Glu Glu Val Glu Gly Asp Val Ala Glu Leu Glu
 17 22 27 32

cta aaa ctt gat aag ctt gtg aaa ctt ggg att gca atg att gat act	204
Leu Lys Leu Asp Lys Leu Val Lys Leu Gly Ile Ala Met Ile Asp Thr	
33 38 43 48	
gga aaa gcc ttt tgt gtt gca aat aaa cag ttc atg aat ggg att cga	252
Gly Lys Ala Phe Cys Val Ala Asn Lys Gln Phe Met Asn Gly Ile Arg	
49 54 59 64	
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Asp Leu Ala Gln Tyr Ser Ser Asn Asp Ala Val Val Glu Thr Ser Leu	
65 70 75 80	
acc aag ttt tct gac agt ctt caa gaa atg ata aat ttt cac aca atc	348
Thr Lys Phe Ser Asp Ser Leu Gln Glu Met Ile Asn Phe His Thr Ile	
81 86 91 96	
ctg ttg cca aac tca gag atc aat tta agg cac agc ttc agt aac ttt	396
Leu Leu Pro Asn Ser Glu Ile Asn Leu Arg His Ser Phe Ser Asn Phe	
97 102 107 112	
gtt-aaa-gaa-gat-ctt-aga-aaa-ttc-aaa-gat-gcc-aag-aag- caa -ttt-gaa	444
Val Lys Glu Asp Leu Arg Lys Phe Lys Asp Ala Lys Lys Gln Phe Glu	
113 118 123 128	
aaa gtc agt gaa gaa aaa gaa aat gcg tta gta aaa aat gcc caa gta	492
Lys Val Ser Glu Glu Lys Glu Asn Ala Leu Val Lys Asn Ala Gln Val	
129 134 139 144	
caa aga aac aaa caa cat gaa gtt gaa gaa gcc acc aac att ctg aca	540
Gln Arg Asn Lys Gln His Glu Val Glu Glu Ala Thr Asn Ile Leu Thr	
145 150 155 160	
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Ala Thr Arg Lys Cys Phe Arg His Ile Ala Leu Asp Tyr Val Leu Gln	
161 166 171 176	
att aat gtt ctt caa tca aaa agg aga tca gaa atc cta aaa tca atg	636
Ile Asn Val Leu Gln Ser Lys Arg Arg Ser Glu Ile Leu Lys Ser Met	
177 182 187 192	
ttg tca ttt atg tat gcc cat ttg gcc ttc ttt cat caa gga tat gat	684
Leu Ser Phe Met Tyr Ala His Leu Ala Phe Phe His Gln Gly Tyr Asp	
193 198 203 208	
ctg ttt agt gaa ctt gga ccc tac atg aag gat ctt ggt gca cag ttg	732
Leu Phe Ser Glu Leu Gly Pro Tyr Met Lys Asp Leu Gly Ala Gln Leu	
209 214 219 224	
gat cga ctg gtt gtg gat gca gca aag gag aaa aga gaa atg gag caa	780
Asp Arg Leu Val Val Asp Ala Ala Lys Glu Lys Arg Glu Met Glu Gln	
225 230 235 240	
aaa cat tcc acc att caa caa aag gat ttc tcc agt gat gat tct aag	828
Lys His Ser Thr Ile Gln Gln Lys Asp Phe Ser Ser Asp Asp Ser Lys	
241 246 251 256	
tta gaa tat aac gta gat gct gca aat ggc ata gtt atg gaa gga tat	876

Leu Glu Tyr Asn Val Asp Ala Ala Asn Gly Ile Val Met Glu Gly Tyr	
257 262 267 272	
ctg ttc aaa cga gcc agc aat gcc ttc aaa act tgg aac agg cgc tgg	924
Leu Phe Lys Arg Ala Ser Asn Ala Phe Lys Thr Trp Asn Arg Arg Trp	
273 278 283 288	
ttt tca ata cag aat aat cag ttg gtt tac cag aaa aaa ttt aag gat	972
Phe Ser Ile Gln Asn Asn Gln Leu Val Tyr Gln Lys Lys Phe Lys Asp	
289 294 299 304	
aat ccg act gtg gta gtt gaa gac ctc agg ctt tgc aca gtg aaa cat	1020
Asn Pro Thr Val Val Val Glu Asp Leu Arg Leu Cys Thr Val Lys His	
305 310 315 320	
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Cys Glu Asp Ile Glu Arg Arg Phe Cys Phe Glu Val Val Ser Pro Thr	
321 326 331 336	
aaa agt tgc atg ctc cag gca gat tcc gaa aag ctg cgc cag gca tgg	1116
Lys Ser Cys Met Leu Gln Ala Asp Ser Glu Lys Leu Arg Gln Ala Trp	
337 342 347 352	
att aag gct gtt cag acc agt att gct act gct tat aga gag aag ggt	1164
Ile Lys Ala Val Gln Thr Ser Ile Ala Thr Ala Tyr Arg Glu Lys Gly	
353 358 363 368	
gat gaa tca gag aag ctg gat aag aaa tca tct cca tcc aca gga agc	1212
Asp Glu Ser Glu Lys Leu Asp Lys Lys Ser Ser Pro Ser Thr Gly Ser	
369 374 379 384	
cta gat tct gga aat gag tcc aaa gag aaa tta ttg aaa gga gaa agt	1260
Leu Asp Ser Gly Asn Glu Ser Lys Glu Lys Leu Leu Lys Gly Glu Ser	
385 390 395 400	
gcg ctt cag cgg gtc cag tgt atc cct ggc aat gcc agc tgt tgt gac	1308
Ala Leu Gln Arg Val Gln Cys Ile Pro Gly Asn Ala Ser Cys Cys Asp	
401 406 411 416	
tgt ggc ctg gca gat cca cgg tgg gcc agc atc aac ctg ggc atc acc	1356
Cys Gly Leu Ala Asp Pro Arg Trp Ala Ser Ile Asn Leu Gly Ile Thr	
417 422 427 432	
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Leu Cys Ile Glu Cys Ser Gly Ile His Arg Ser Leu Gly Val His Phe	
433 438 443 448	
tca aaa gta cga tct tta act tta gac acc tgg gag cca gaa ctt tta	1452
Ser Lys Val Arg Ser Leu Thr Leu Asp Thr Trp Glu Pro Glu Leu Leu	
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Lys Leu Met Cys Glu Leu Gly Asn Asp Val Ile Asn Arg Val Tyr Glu	
465 470 475 480	
gct aat gtg gaa aaa atg gga ata aag aaa ccc caa cca gga caa aga	1548
Ala Asn Val Glu Lys Met Gly Ile Lys Lys Pro Gln Pro Gly Gln Arg	

481	486	491	496	
cag gag aag gag gca tat atc aga gca aaa tat gtg gag agg aaa ttt				1596
Gln Glu Lys Glu Ala Tyr Ile Arg Ala Lys Tyr Val Glu Arg Lys Phe				
497	502	507	512	
gtg gat aaa tat tct ata tca tta tca cct cct gag cag caa aaa aag				1644
Val Asp Lys Tyr Ser Ile Ser Leu Ser Pro Pro Glu Gln Gln Lys Lys				
513	518	523	528	
ttt gtc tct aaa agt tct gaa gaa aag agg ctg agc att tct aaa ttt				1692
Phe Val Ser Lys Ser Ser Glu Glu Lys Arg Leu Ser Ile Ser Lys Phe				
529	534	539	544	
ggg cca ggg gac caa gtc aga gca tct gcc caa agt tca gtc aga agt				1740
Gly Pro Gly Asp Gln Val Arg Ala Ser Ala Gln Ser Ser Val Arg Ser				
545	550	555	560	
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Asn Asp Ser Gly Ile Gln Gln Ser Ser Asp Asp Gly Arg Glu Ser Leu				
561	566	571	576	
ccc tcc acg gtg tca gcc aat agt tta tat gag cct gaa gga gaa agg				1836
Pro Ser Thr Val Ser Ala Asn Ser Leu Tyr Glu Pro Glu Gly Glu Arg				
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caa gat tct tct atg ttt ctt gac tcg aaa cat ctt aat cca gga ctt				1884
Gln Asp Ser Ser Met Phe Leu Asp Ser Lys His Leu Asn Pro Gly Leu				
593	598	603	608	
cag ctt tat agg gcg tca tat gaa aaa aac ctt cct aaa atg gct gag				1932
Gln Leu Tyr Arg Ala Ser Tyr Glu Lys Asn Leu Pro Lys Met Ala Glu				
609	614	619	624	
gct ttg gct cat ggt gca gac gtg aac tgg gcc aat tca gag gaa aac				1980
Ala Leu Ala His Gly Ala Asp Val Asn Trp Ala Asn Ser Glu Glu Asn				
625	630	635	640	
aaa gcg aca cca ctt att cag gct gta tta ggg ggc tct ttg gtg acg				2028
Lys Ala Thr Pro Leu Ile Gln Ala Val Leu Gly Gly Ser Leu Val Thr				
641	646	651	656	
tgt gag ttc ctc cta cag aat ggt gct aat gtc aac caa aga gat gtc				2076
Cys Glu Phe Leu Leu Gln Asn Gly Ala Asn Val Asn Gln Arg Asp Val				
657	662	667	672	
caa ggg cgg gga cca ttg cac cat gcc acc gtc tta ggg cac aca ggg				2124
Gln Gly Arg Gly Pro Leu His His Ala Thr Val Leu Gly His Thr Gly				
673	678	683	688	
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Gln Val Cys Leu Phe Leu Lys Arg Gly Ala Asn Gln His Ala Thr Asp				
689	694	699	704	
gaa gaa ggg aaa gac cct ttg agc ata gct gtg gaa gca gcc aat gct				2220
Glu Glu Gly Lys Asp Pro Leu Ser Ile Ala Val Glu Ala Ala Asn Ala				
705	710	715	720	

gat ata gtc acc ttg tta cgt tta gca aga atg aat gaa gag atg cgg	2268
Asp Ile Val Thr Leu Leu Arg Leu Ala Arg Met Asn Glu Glu Met Arg	
721 726 731 736	
gaa tca gaa gga ctt tat gga cag cca ggt gat gaa act tat cag gac	2316
Glu Ser Glu Gly Leu Tyr Gly Gln Pro Gly Asp Glu Thr Tyr Gln Asp	
737 742 747 752	
ata ttt cgt gat ttt tcc caa atg gca tcc aat aat cca gag aaa cta	2364
Ile Phe Arg Asp Phe Ser Gln Met Ala Ser Asn Asn Pro Glu Lys Leu	
753 758 763 768	
aat cgt ttc cag caa gat tca cag aaa ttc tga attttttt aaaaatggga	2415
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Met Ala

1

gcg gag gaa cct cag cag cag aag cag gag ccg ctg ggc agc gac tcc	165
Ala Glu Glu Pro Gln Gln Gln Lys Gln Glu Pro Leu Gly Ser Asp Ser	
3 8 13 18	
gaa ggt gtt aac tgt ctg gcc tat gat gaa gcc atc atg gct cag cag	213
Glu Gly Val Asn Cys Leu Ala Tyr Asp Glu Ala Ile Met Ala Gln Gln	
19 24 29 34	
gac cga att cag caa gag att gct gtg cag aac cct ctg gtg tca gag	261
Asp Arg Ile Gln Gln Glu Ile Ala Val Gln Asn Pro Leu Val Ser Glu	
35 40 45 50	
cgg ctg gag ctc tcg gtc cta tac aag gag tat gct gaa gat gac aac	309
Arg Leu Glu Leu Ser Val Leu Tyr Lys Glu Tyr Ala Glu Asp Asp Asn	
51 56 61 66	
atc tat caa cag aag atc aag gac ctc cac aaa aag tac tcg tac atc	357
Ile Tyr Gln Gln Lys Ile Lys Asp Leu His Lys Lys Tyr Ser Tyr Ile	
67 72 77 82	
cgc aag acc agg cct gac ggc aac tgt ttc tat cgg gct ttc gga ttc	405
Arg Lys Thr Arg Pro Asp Gly Asn Cys Phe Tyr Arg Ala Phe Gly Phe	
83 88 93 98	
tcc cac ttg gag gca ctg ctg gat gac agc aag gag ttg cag cgg ttc	453
Ser His Leu Glu Ala Leu Leu Asp Asp Ser Lys Glu Leu Gln Arg Phe	
99 104 109 114	
aag gct gtg tct gcc aag agc aag gaa gac ctg gtg tcc cag ggc ttc	501
Lys Ala Val Ser Ala Lys Ser Lys Glu Asp Leu Val Ser Gln Gly Phe	
115 120 125 130	
act gaa ttc aca att gag gat ttc cac aac acg ttc atg gac ctg att	549
Thr Glu Phe Thr Ile Glu Asp Phe His Asn Thr Phe Met Asp Leu Ile	
131 136 141 146	
gag cag gtg gag aag cag acc tct gtc gcc gac ctg ctg gcc tcc ttc	597
Glu Gln Val Glu Lys Gln Thr Ser Val Ala Asp Leu Leu Ala Ser Phe	
147 152 157 162	
aat gac cag agc acc tcc gac tac ctt gtg gtc tac ctg cgg ctg ctc	645
Asn Asp Gln Ser Thr Ser Asp Tyr Leu Val Val Tyr Leu Arg Leu Leu	
163 168 173 178	
acc tcg ggc tac ctg cag cgc gag agc aag ttc ttc gag cac ttc atc	693
Thr Ser Gly Tyr Leu Gln Arg Glu Ser Lys Phe Phe Glu His Phe Ile	
179 184 189 194	
gag ggt gga cgg act gtc aag gag ttc tgc cag cag gag gtg gag ccc	741
Glu Gly Gly Arg Thr Val Lys Glu Phe Cys Gln Gln Glu Val Glu Pro	
195 200 205 210	
atg tgc aag gag agc gac cac atc cac atc att gcg ctg gcc cag gcc	789
Met Cys Lys Glu Ser Asp His Ile His Ile Ile Ala Leu Ala Gln Ala	

211	216	221	226			
ctc agc gtg tcc atc	cag gtg gag tac atg	gac cgc ggc gag ggc ggc	837			
Leu Ser Val Ser Ile	Gln Val Glu Tyr Met	Asp Arg Gly Glu Gly Gly				
227	232	237	242			
acc acc aat ccg cac	atc ttc cct gag ggc	tcc gag ccc aag gtc tac	885			
Thr Thr Asn Pro His	Ile Phe Pro Glu Gly	Ser Glu Pro Lys Val Tyr				
243	248	253	258			
ctt ctc tac cgg cct	gga cac tac gat atc	ctc tac aaa tag ggctggc	934			
Leu Leu Tyr Arg Pro	Gly His Tyr Asp Ile	Leu Tyr Lys *				
259	264	269				
tccagcccg	tgctgccctg	ctgccccct	ctgccaggcg	ctagacatgt	acagagggtt	994
ttctgtgggt	gtaaatggtc	ctatttcacc	cccttcttcc	tgtcacatga	cccccccccc	1054
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ttaaaaacat	ttagtggtga	tatttatgaa	aggaaatgat	tacttttttt	cttgactctt	180
gtagagggaac	ttaaatggtt	tgaaattgtg	actcagttaa	ctctgtatcc	attcattccc	240
agaaacaagc	cgcatttctc	cttgggggaga	ctgataattt	aaaagggttg	ttgtgtcaga	300
aacattccca	gcttcatcac	caaccctttc	cttccacctc	tgcccactgg	agaccactta	360
catcccgaag	cggacgcggc	agctgaagtc	aggaaaccat	gcatcacatt	agcaggagcc	420
aactgcagac	tttaaactcc	gttcaacatg	tggatgcggc	agagaa	atg acc tgt	475
					Met Thr Cys	
					1	
cca gac aag ccg ggg	cag ctc ata aac	tgg ttc atc tgc	tcc ctg tgc	523		
Pro Asp Lys Pro Gly	Gln Leu Ile Asn	Trp Phe Ile Cys	Ser Leu Cys			
4 /	9	14	19			
gtc ccg cgg gtg cgt	aag ctc tgg agc	agc cgg cgt	cca agg acc cgg	571		
Val Pro Arg Val Arg	Lys Leu Trp Ser	Ser Arg Arg	Pro Arg Thr Arg			

20	25	30	35	
aga aac ctt ctg ctg ggc act gcg tgt gcc atc tac ttg ggc ttc ctg				619
Arg Asn Leu Leu Leu Gly Thr Ala Cys Ala Ile Tyr Leu Gly Phe Leu				
36	41	46	51	
gtg agc cag gtg ggg agg gcc tct ctc cag cat gga cag gcg gct gag				667
Val Ser Gln Val Gly Arg Ala Ser Leu Gln His Gly Gln Ala Ala Glu				
52	57	62	67	
aag ggg cca cat cgc agc cgc gac acc gcc gag cca tcc ttc cct gag				715
Lys Gly Pro His Arg Ser Arg Asp Thr Ala Glu Pro Ser Phe Pro Glu				
68	73	78	83	
ata ccc ctg gat ggt acc ctg gcc cct cca gag tcc cag ggc aat ggg				763
Ile Pro Leu Asp Gly Thr Leu Ala Pro Pro Glu Ser Gln Gly Asn Gly				
84	89	94	99	
tcc act ctg cag ccc aat gtg gtg tac att acc cta cgc tcc aag cgc				811
Ser Thr Leu Gln Pro Asn Val Val Tyr Ile Thr Leu Arg Ser Lys Arg				
100	105	110	115	
agc aag ccg gcc aat atc cgt ggc acc gtg aag ccc aag cgc agg aaa				859
Ser Lys Pro Ala Asn Ile Arg Gly Thr Val Lys Pro Lys Arg Arg Lys				
116	121	126	131	
aag cat gca gtg gca tcg gct gcc cca ggg cag gag gct ttg gtc gga				907
Lys His Ala Val Ala Ser Ala Ala Pro Gly Gln Glu Ala Leu Val Gly				
132	137	142	147	
cca tcc ctt cag ccg cag gaa gcg gca agg gaa gct gat gct gta gca				955
Pro Ser Leu Gln Pro Gln Glu Ala Ala Arg Glu Ala Asp Ala Val Ala				
148	153	158	163	
cct ggg tac gct cag gga gca aac ctg gtt aag att gga gag cga ccc				1003
Pro Gly Tyr Ala Gln Gly Ala Asn Leu Val Lys Ile Gly Glu Arg Pro				
164	169	174	179	
tgg agg ttg gtg cgg ggt ccg gga gtg cga gcc ggg ggc cca gac ttc				1051
Trp Arg Leu Val Arg Gly Pro Gly Val Arg Ala Gly Gly Pro Asp Phe				
180	185	190	195	
ctg cag ccc agc tcc agg gag agc aac att agg atc tac agc gag agc				1099
Leu Gln Pro Ser Ser Arg Glu Ser Asn Ile Arg Ile Tyr Ser Glu Ser				
196	201	206	211	
gcc ccc tcc tgg ctg agc aaa gat gac atc cga aga atg cga ctc ttg				1147
Ala Pro Ser Trp Leu Ser Lys Asp Asp Ile Arg Arg Met Arg Leu Leu				
212	217	222	227	
gcg gac agc gca gtg gca ggg ctc cgg cct gtg tcc tct agg agc gga				1195
Ala Asp Ser Ala Val Ala Gly Leu Arg Pro Val Ser Ser Arg Ser Gly				
228	233	238	243	
gcc cgt ttg ctg gtg ctg gag ggg ggc gca cct ggc gct gtg ctc cgc				1243
Ala Arg Leu Leu Val Leu Glu Gly Gly Ala Pro Gly Ala Val Leu Arg				
244	249	254	259	

tgt ggc cct agc ccc	tgt ggg ctt ctc aag	cag ccc ttg gac atg agt	1291
Cys Gly Pro Ser Pro	Cys Gly Leu Leu Lys	Gln Pro Leu Asp Met Ser	
260	265	270 275	
gag gtg ttt gcc ttc	cac cta gac agg atc	ctg ggg ctc aac agg acc	1339
Glu Val Phe Ala Phe	His Leu Asp Arg Ile	Leu Gly Leu Asn Arg Thr	
276	281	286 291	
ctg ccg tct gtg agc	agg aaa gca gag ttc	atc caa gat ggc cgc cca	1387
Leu Pro Ser Val Ser	Arg Lys Ala Glu Phe	Ile Gln Asp Gly Arg Pro	
292	297	302 307	
tgc ccc atc att ctt	tgg gat gca tct tta	tct tca gca agt aat gac	1435
Cys Pro Ile Ile Leu	Trp Asp Ala Ser Leu	Ser Ser Ala Ser Asn Asp	
308	313	318 323	
acc cat tct tct gtt	aag ctc acc tgg gga	act tat cag cag ttg ctg	1483
Thr His Ser Ser Val	Lys Leu Thr Trp Gly	Thr Tyr Gln Gln Leu Leu	
324	329	334 339	
aaa cag aaa tgc tgg	cag aat ggc cga gta	ccc aag cct gaa tca ggt	1531
Lys Gln Lys Cys Trp	Gln Asn Gly Arg Val	Pro Lys Pro Glu Ser Gly	
340	345	350 355	
tgt act gaa ata cat	cat cat gag tgg tcc	aag atg gca ctc ttt gat	1579
Cys Thr Glu Ile His	His His Glu Trp Ser	Lys Met Ala Leu Phe Asp	
356	361	366 371	
ttt ttg tta cag att	tat aat cgc tta gat	aca aat tgc tgt gga ttc	1627
Phe Leu Leu Gln Ile	Tyr Asn Arg Leu Asp	Thr Asn Cys Cys Gly Phe	
372	377	382 387	
aga cct cgc aag gaa	gat gcc tgt gta cag	aat gga ttg agg cca aaa	1675
Arg Pro Arg Lys Glu	Asp Ala Cys Val Gln	Asn Gly Leu Arg Pro Lys	
388	393	398 403	
tgt gat gac caa ggt	tct gcg gct cta gca	cac att atc cag cga aag	1723
Cys Asp Asp Gln Gly	Ser Ala Ala Leu Ala	His Ile Ile Gln Arg Lys	
404	409	414 419	
cat gac cca agg cat	ttg gtt ttt ata gac	aac aag ggt ttc ttt gac	1771
His Asp Pro Arg His	Leu Val Phe Ile Asp	Asn Lys Gly Phe Phe Asp	
420	425	430 435	
agg agt gaa gat aac	tta aac ttc aaa ttg	tta gaa ggc atc aaa gag	1819
Arg Ser Glu Asp Asn	Leu Asn Phe Lys Leu	Leu Glu Gly Ile Lys Glu	
436	441	446 451	
ttt cca gct tct gca	gtt tct gtt ttg aag	agc cag cac tta cgg cag	1867
Phe Pro Ala Ser Ala	Val Ser Val Leu Lys	Ser Gln His Leu Arg Gln	
452	457	462 467	
aaa ctt ctt cag tct	ctg ttt ctt gat aaa	gtg tat tgg gaa agt caa	1915
Lys Leu Leu Gln Ser	Leu Phe Leu Asp Lys	Val Tyr Trp Glu Ser Gln	
468	473	478 483	

cag gca cca aaa gac aga aag gtc ccc acc agg aag gcc gag agg tcg	1380
Gln Ala Pro Lys Asp Arg Lys Val Pro Thr Arg Lys Ala Glu Arg Ser	
224 229 234 239	

gtc agc tgc att gag gtg acc cca ggg gac agg agt tgg cac caa atg	1428
Val Ser Cys Ile Glu Val Thr Pro Gly Asp Arg Ser Trp His Gln Met	
240 245 250 255	

gta gtg aga gcc cta tcc tcc cag gag tcc aag cca gag cac cag ggc	1476
Val Val Arg Ala Leu Ser Ser Gln Glu Ser Lys Pro Glu His Gln Gly	
256 261 266 271	

ttg gca gag cct gag aac gac cag ctc ccg gag gag tac caa caa ccg	1524
Leu Ala Glu Pro Glu Asn Asp Gln Leu Pro Glu Glu Tyr Gln Gln Pro	
272 277 282 287	

cca ccc ttt gcc cct ggg tac tgc tag agaac aggtccaccc tggctctggg	1576
Pro Pro Phe Ala Pro Gly Tyr Cys *	
288 293	

actcgctgcc aggggctgcc acactcctga atgccttaac atttcttcca tggccccaca	1636
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ccatggcatc cgggggtctt cggaacccg ggaaatggaa taaagatgtt tttggggtct	1696
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gaaaaaaaa aaaaa	1711
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gcagagcagc atctgctgaa gagacagaaa ccagccccag aggtgtcaca ggaaggcacc	180
agcaaggaca ttgggtcttg atttgattca gcagtcctgt caagtataaa tgtg atg	237
	Met
	1

gct gtg ctg cct ggc cct ctg cag ctg ctg gga gtg ctg ctt acc att	285
Ala Val Leu Pro Gly Pro Leu Gln Leu Leu Gly Val Leu Leu Thr Ile	
2 7 12 17	

tcc ctg agt tcc atc agg ctc att cag gct ggt gcc tac tat ggg atc	333
Ser Leu Ser Ser Ile Arg Leu Ile Gln Ala Gly Ala Tyr Tyr Gly Ile	
18 23 28 33	

aag ccg ctg cca cct caa att cct cct cag atg cca cca caa att cca	381
Lys Pro Leu Pro Pro Gln Ile Pro Pro Gln Met Pro Pro Gln Ile Pro	
34 39 44 49	
caa tac cag ccc ctg ggt cag caa gta cct cac atg cct ttg gcc aaa	429
Gln Tyr Gln Pro Leu Gly Gln Gln Val Pro His Met Pro Leu Ala Lys	
50 55 60 65	
gat ggc ctc gcc atg ggc aag gag atg ccc cac ttg cag tat ggc aaa	477
Asp Gly Leu Ala Met Gly Lys Glu Met Pro His Leu Gln Tyr Gly Lys	
66 71 76 81	
gag tat cca cac cta ccc caa tat atg aag gaa att cca ccg gcg cca	525
Glu Tyr Pro His Leu Pro Gln Tyr Met Lys Glu Ile Gln Pro Ala Pro	
82 87 92 97	
aga atg ggc aag gaa gcc gtt ccc aag aaa ggc aaa gaa ata cca tta	573
Arg Met Gly Lys Glu Ala Val Pro Lys Lys Gly Lys Glu Ile Pro Leu	
98 103 108 113	
gcc agt tta cga ggg gaa caa ggt ccc cgt gga gag cct ggc cca aga	621
Ala Ser Leu Arg Gly Glu Gln Gly Pro Arg Gly Glu Pro Gly Pro Arg	
114 119 124 129	
gga cca cct ggg ccc cct ggt tta cca ggt cat ggg ata cct gga att	669
Gly Pro Pro Gly Pro Pro Gly Leu Pro Gly His Gly Ile Pro Gly Ile	
130 135 140 145	
aaa gga aaa cca ggg cca cag gga tat cca gga gtt gga aag cca ggt	717
Lys Gly Lys Pro Gly Pro Gln Gly Tyr Pro Gly Val Gly Lys Pro Gly	
146 151 156 161	
atg cct gga atg cca ggg aag cca gga gcc atg ggc atg cct ggg gca	765
Met Pro Gly Met Pro Gly Lys Pro Gly Ala Met Gly Met Pro Gly Ala	
162 167 172 177	
aaa gga gaa att gga cag aaa ggg gaa att ggg cct atg ggg atc cca	813
Lys Gly Glu Ile Gly Gln Lys Gly Glu Ile Gly Pro Met Gly Ile Pro	
178 183 188 193	
gga cca caa gga cct cca ggg cct cat gga ctt cct ggc att ggg aag	861
Gly Pro Gln Gly Pro Pro Gly Pro His Gly Leu Pro Gly Ile Gly Lys	
194 199 204 209	
cca ggt ggg cca ggg tta cca ggg caa cca gga cca aag ggt gat cga	909
Pro Gly Gly Pro Gly Leu Pro Gly Gln Pro Gly Pro Lys Gly Asp Arg	
210 215 220 225	
gga ccc aaa gga cta cca gga cct caa ggc ctt cgg ggt cct aaa gga	957
Gly Pro Lys Gly Leu Pro Gly Pro Gln Gly Leu Arg Gly Pro Lys Gly	
226 231 236 241	
gac aag ggc ttc ggg atg cca ggt gcg cca ggt gta aag ggg cct cca	1005
Asp Lys Gly Phe Gly Met Pro Gly Ala Pro Gly Val Lys Gly Pro Pro	
242 247 252 257	

ggg atg cac ggc cct ccc ggc cct gtt gga ctg cca gga gtg ggc aaa	1053
Gly Met His Gly Pro Pro Gly Pro Val Gly Leu Pro Gly Val Gly Lys	
258 263 268 273	
cca gga gtg aca ggc ttc cct ggg ccc cag ggc ccc ctg gga aag cca	1101
Pro Gly Val Thr Gly Phe Pro Gly Pro Gln Gly Pro Leu Gly Lys Pro	
274 279 284 289	
ggg gct cca gga gaa cct ggg cca caa ggc cct att ggg gta ccg ggg	1149
Gly Ala Pro Gly Glu Pro Gly Pro Gln Gly Pro Ile Gly Val Pro Gly	
290 295 300 305	
gtt caa gga cct cct ggg ata ccc gga att gga aag cca ggc cag gat	1197
Val Gln Gly Pro Pro Gly Ile Pro Gly Ile Gly Lys Pro Gly Gln Asp	
306 311 316 321	
ggg atc cca ggc cag cca gga ttt cca ggt ggc aaa ggg gag caa gga	1245
Gly Ile Pro Gly Gln Pro Gly Phe Pro Gly Gly Lys Gly Glu Gln Gly	
322 327 332 337	
ctg cca ggg cta cca gga ccc cca ggc ctt cca ggg att ggg aaa cca	1293
Leu Pro Gly Leu Pro Gly Pro Pro Gly Leu Pro Gly Ile Gly Lys Pro	
338 343 348 353	
ggc ttc cca gga ccc aaa ggt gac cgg ggc atg gga ggt gtt cct ggg	1341
Gly Phe Pro Gly Pro Lys Gly Asp Arg Gly Met Gly Gly Val Pro Gly	
354 359 364 369	
gct ctt gga cca aga ggg gag aaa gga cca ata ggt gcc cca gga ata	1389
Ala Leu Gly Pro Arg Gly Glu Lys Gly Pro Ile Gly Ala Pro Gly Ile	
370 375 380 385	
ggg ggt cct cca gga gag cca ggc ctg cct gga atc cca ggt cct atg	1437
Gly Gly Pro Pro Gly Glu Pro Gly Leu Pro Gly Ile Pro Gly Pro Met	
386 391 396 401	
ggc cct cca ggt gct att ggt ttt cct gga ccc aaa gga gaa ggt ggg	1485
Gly Pro Pro Gly Ala Ile Gly Phe Pro Gly Pro Lys Gly Glu Gly Gly	
402 407 412 417	
att gta ggg cca cag ggg cca cca ggt ccc aag ggt gag cca ggg ctt	1533
Ile Val Gly Pro Gln Gly Pro Pro Gly Pro Lys Gly Glu Pro Gly Leu	
418 423 428 433	
caa ggc ttc cca gga aag cca ggt ttc ctt ggt gaa gta ggg cct cct	1581
Gln Gly Phe Pro Gly Lys Pro Gly Phe Leu Gly Glu Val Gly Pro Pro	
434 439 444 449	
ggc atg agg ggt ttc cca ggt ccc ata ggc ccc aag ggg gaa cat ggg	1629
Gly Met Arg Gly Phe Pro Gly Pro Ile Gly Pro Lys Gly Glu His Gly	
450 455 460 465	
caa aaa ggt gta cca gga ctc cct ggt gtt cca ggg ctt ctc gga cct	1677
Gln Lys Gly Val Pro Gly Leu Pro Gly Val Pro Gly Leu Leu Gly Pro	
466 471 476 481	
aag gga gaa cca gga atc cca ggg gat cag ggt tta cag ggc ccc cca	1725

Lys Gly Glu Pro Gly Ile Pro Gly Asp Gln Gly Leu Gln Gly Pro Pro
482 487 492 497

ggt atc cca ggg att ggg ggc cct agt ggc ccc att gga cca cct ggg 1773
Gly Ile Pro Gly Ile Gly Gly Pro Ser Gly Pro Ile Gly Pro Pro Gly
498 503 508 513

att cca ggc ccc aaa ggg gag cct ggc ctc cca ggg ccc cct ggg ttc 1821
Ile Pro Gly Pro Lys Gly Glu Pro Gly Leu Pro Gly Pro Pro Gly Phe
514 519 524 529

cct ggt ata ggg aaa ccc gga gtg gca gga ctt cat ggc ccc cca ggg 1869
Pro Gly Ile Gly Lys Pro Gly Val Ala Gly Leu His Gly Pro Pro Gly
530 535 540 545

aag cct ggt gcc ctt ggt cct caa ggc cag cct ggc ctt cca gga ccc 1917
Lys Pro Gly Ala Leu Gly Pro Gln Gly Gln Pro Gly Leu Pro Gly Pro
546 551 556 561

cca ggc cct cca gga cct cca gga ccc cca gct gtg atg ccc cct aca 1965
Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Ala Val Met Pro Pro Thr
562 567 572 577

cca cca ccc cag gga gag tat ctg cca gat atg ggg ctg gga att gat 2013
Pro Pro Pro Gln Gly Glu Tyr Leu Pro Asp Met Gly Leu Gly Ile Asp
578 583 588 593

ggc gtg aaa ccc ccc cat gcc tac ggg gct aag aaa ggc aag aat gga 2061
Gly Val Lys Pro Pro His Ala Tyr Gly Ala Lys Lys Gly Lys Asn Gly
594 599 604 609

ggg cca gcc tat gag atg cct gca ttt acc gcc gag cta acc gca cct 2109
Gly Pro Ala Tyr Glu Met Pro Ala Phe Thr Ala Glu Leu Thr Ala Pro
610 615 620 625

ttc cca ccg gtg ggg gcc cca gtg aag ttt aac aaa ctg ctg tat aac 2157
Phe Pro Pro Val Gly Ala Pro Val Lys Phe Asn Lys Leu Leu Tyr Asn
626 631 636 641

ggc aga cag aac tac aac ccg cag aca ggc atc ttc acc tgt gag gtc 2205
Gly Arg Gln Asn Tyr Asn Pro Gln Thr Gly Ile Phe Thr Cys Glu Val
642 647 652 657

cct ggt gtc tac tac ttt gca tac cac gtt cac tgc aag ggg ggc aac 2253
Pro Gly Val Tyr Tyr Phe Ala Tyr His Val His Cys Lys Gly Gly Asn
658 663 668 673

gtg tgg gtt gct cta ttc aag aac aac gag ccc gtg atg tac acg tac 2301
Val Trp Val Ala Leu Phe Lys Asn Asn Glu Pro Val Met Tyr Thr Tyr
674 679 684 689

gac gag tac aaa aag ggc ttc ctg gac cag gca tct ggg agt gca gtg 2349
Asp Glu Tyr Lys Lys Gly Phe Leu Asp Gln Ala Ser Gly Ser Ala Val
690 695 700 705

ctg ctg ctc agg ccc gga gac cgg gtg ttc ctc cag atg ccc tca gaa 2397
Leu Leu Leu Arg Pro Gly Asp Arg Val Phe Leu Gln Met Pro Ser Glu

706	711	716	721	
cag gct gca gga ctg tat gcc ggg cag tat gtc cac tcc tcc ttt tca				2445
Gln Ala Ala Gly Leu Tyr Ala Gly Gln Tyr Val His Ser Ser Phe Ser				
722	727	732	737	
gga tat tta ttg tat ccc atg taa aaacaaaaaaaa aaaaaaaaaa				2487
Gly Tyr Leu Leu Tyr Pro Met *				
738	743			

<210> 161
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 <213> Homo sapiens

<220>
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 <222> (258)..(1697)

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gcttactttt taaagattga agaaaaaaaa gaagacagaa aaagaagaac tcaaagatac	180
acaaagtaat ttgaaccaag gctcagaagt ttttggagcc gtgagggata cagcagtttg	240
gtcaatattg tcttaac atg ctt caa ata aat cag atg ttc tca gtg cag	290
Met Leu Gln Ile Asn Gln Met Phe Ser Val Gln	
1 5	
ctg agt ctt ggt gag cag aca tgg gaa tcc gaa ggc agc agt ata aag	338
Leu Ser Leu Gly Glu Gln Thr Trp Glu Ser Glu Gly Ser Ser Ile Lys	
12 17 22 27	
aag gct cag cag gct gtt gcc aat aaa gct ttg act gaa tct acg ctt	386
Lys Ala Gln Gln Ala Val Ala Asn Lys Ala Leu Thr Glu Ser Thr Leu	
28 33 38 43	
ccc aaa cca gtt cag aag cca ccc aaa agt aat gtt aac aat aac cca	434
Pro Lys Pro Val Gln Lys Pro Pro Lys Ser Asn Val Asn Asn Asn Pro	
44 49 54 59	
ggc agt ata act cca act gtg gaa ctg aat ggg ctt gct atg aaa agg	482
Gly Ser Ile Thr Pro Thr Val Glu Leu Asn Gly Leu Ala Met Lys Arg	
60 65 70 75	
gga gag cct gcc atc tac agg cca tta gat cca aag cca ttc cca aat	530
Gly Glu Pro Ala Ile Tyr Arg Pro Leu Asp Pro Lys Pro Phe Pro Asn	
76 81 86 91	
tat aga gct aat tac aac ttt cgg ggc atg tac aat cag agg tat cat	578

Tyr	Arg	Ala	Asn	Tyr	Asn	Phe	Arg	Gly	Met	Tyr	Asn	Gln	Arg	Tyr	His	
92					97					102					107	
tgc	cca	gtg	cct	aag	atc	ttt	tat	gtt	cag	ctc	act	gta	gga	aat	aat	626
Cys	Pro	Val	Pro	Lys	Ile	Phe	Tyr	Val	Gln	Leu	Thr	Val	Gly	Asn	Asn	
108					113					118					123	
gaa	ttt	ttt	ggg	gaa	gga	aag	act	cga	caa	gct	gct	aga	cac	aat	gct	674
Glu	Phe	Phe	Gly	Glu	Gly	Lys	Thr	Arg	Gln	Ala	Ala	Arg	His	Asn	Ala	
124					129					134					139	
gca	atg	aaa	gcc	ctc	caa	gca	ctg	cag	aat	gaa	cct	att	cca	gaa	aga	722
Ala	Met	Lys	Ala	Leu	Gln	Ala	Leu	Gln	Asn	Glu	Pro	Ile	Pro	Glu	Arg	
140					145					150					155	
tct	cct	cag	aat	ggg	gaa	tca	gga	aag	gat	atg	gat	gat	gac	aaa	gat	770
Ser	Pro	Gln	Asn	Gly	Glu	Ser	Gly	Lys	Asp	Met	Asp	Asp	Asp	Lys	Asp	
156					161					166					171	
gca	aat	aag	tct	gag	atc	agc	tta	gtg	ttt	gaa	att	gct	ctg	aag	cga	818
Ala	Asn	Lys	Ser	Glu	Ile	Ser	Leu	Val	Phe	Glu	Ile	Ala	Leu	Lys	Arg	
172					177					182					187	
aat	atg	cct	gtc	agt	ttt	gag	gtt	att	aaa	gaa	agt	gga	cca	cca	cat	866
Asn	Met	Pro	Val	Ser	Phe	Glu	Val	Ile	Lys	Glu	Ser	Gly	Pro	Pro	His	
188					193					198					203	
atg	aaa	agc	ttt	gtt	act	cga	gtg	tca	gta	gga	gag	ttc	tct	gca	gaa	914
Met	Lys	Ser	Phe	Val	Thr	Arg	Val	Ser	Val	Gly	Glu	Phe	Ser	Ala	Glu	
204					209					214					219	
gga	gaa	gga	aat	agc	aaa	aaa	ctc	tcc	aag	aag	cgc	gct	gcg	acc	acc	962
Gly	Glu	Gly	Asn	Ser	Lys	Lys	Leu	Ser	Lys	Lys	Arg	Ala	Ala	Thr	Thr	
220					225					230					235	
gtc	tta	cag	gag	ctt	aaa	aaa	ctt	cca	cct	ctt	cct	gtg	gtg	gaa	aag	1010
Val	Leu	Gln	Glu	Leu	Lys	Lys	Leu	Pro	Pro	Leu	Pro	Val	Val	Glu	Lys	
236					241					246					251	
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Pro	Lys	Leu	Phe	Phe	Lys	Lys	Arg	Pro	Lys	Thr	Ile	Val	Lys	Ala	Gly	
252					257					262					267	
cca	gaa	tat	ggc	caa	ggg	atg	aac	cct	att	agc	cgc	ctg	gcg	caa	att	1106
Pro	Glu	Tyr	Gly	Gln	Gly	Met	Asn	Pro	Ile	Ser	Arg	Leu	Ala	Gln	Ile	
268					273					278					283	
caa	cag	gcc	aaa	aag	gaa	aag	gag	ccg	gat	tat	gtt	ttg	ctt	tca	gaa	1154
Gln	Gln	Ala	Lys	Lys	Glu	Lys	Glu	Pro	Asp	Tyr	Val	Leu	Leu	Ser	Glu	
284					289					294					299	
aga	gga	atg	cct	cga	cgt	cga	gaa	ttt	gtg	atg	cag	gtg	aag	gta	ggc	1202
Arg	Gly	Met	Pro	Arg	Arg	Arg	Glu	Phe	Val	Met	Gln	Val	Lys	Val	Gly	
300					305					310					315	
aat	gaa	gtt	gct	aca	gga	aca	gga	cct	aat	aaa	aag	ata	gcc	aaa	aaa	1250
Asn	Glu	Val	Ala	Thr	Gly	Thr	Gly	Pro	Asn	Lys	Lys	Ile	Ala	Lys	Lys	

316	321	326	331	
aat gct gca gaa gca atg ctg tta caa ctt ggt tat aaa gca tcc act				1298
Asn Ala Ala Glu Ala Met Leu Leu Gln Leu Gly Tyr Lys Ala Ser Thr				
332	337	342	347	
aat ctt cag gat caa ctt gag aag aca ggg gaa aac aaa gga tgg agt				1346
Asn Leu Gln Asp Gln Leu Glu Lys Thr Gly Glu Asn Lys Gly Trp Ser				
348	353	358	363	
ggg cca aag cct ggg ttt cct gaa cca aca aat aat act cca aaa gga				1394
Gly Pro Lys Pro Gly Phe Pro Glu Pro Thr Asn Asn Thr Pro Lys Gly				
364	369	374	379	
att ctt cat ttg tct cct gat gtt tat caa gag atg gaa gcc agc cgc				1442
Ile Leu His Leu Ser Pro Asp Val Tyr Gln Glu Met Glu Ala Ser Arg				
380	385	390	395	
cac aaa gta atc tct ggc act act cta ggc tat ttg tca ccc aaa gat				1490
His Lys Val Ile Ser Gly Thr Thr Leu Gly Tyr Leu Ser Pro Lys Asp				
396	401	406	411	
atg aac caa cct tca agc tct ttc ttc agt ata tct ccc aca tcg aat				1538
Met Asn Gln Pro Ser Ser Ser Phe Phe Ser Ile Ser Pro Thr Ser Asn				
412	417	422	427	
agt tca gct aca att gcc agg gaa ctc ctt atg aat gga aca tct tct				1586
Ser Ser Ala Thr Ile Ala Arg Glu Leu Leu Met Asn Gly Thr Ser Ser				
428	433	438	443	
aca gct gaa gcc ata ggt tta aaa gga agt tct cct act ccc cct tgt				1634
Thr Ala Glu Ala Ile Gly Leu Lys Gly Ser Ser Pro Thr Pro Pro Cys				
444	449	454	459	
tct cca gta caa cct tca aaa caa ctg gaa tat tta gca agg att caa				1682
Ser Pro Val Gln Pro Ser Lys Gln Leu Glu Tyr Leu Ala Arg Ile Gln				
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Gly Phe Gln Val *				
476				

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tgtgggcctc tcggggagcg agctgcggtt agcggcgcac tgggtacagg cgcgcgcttg 180
gctgtcgctt ctgcccgtgt gtttgggagg actcgaactg gcgccaggaa atattaggaa 240
gctgtgattt tcaaagctaa tt atg aaa aca ttt atc att gga atc agt ggt 292
Met Lys Thr Phe Ile Ile Gly Ile Ser Gly
1 5
gtg aca aac agt ggc aaa aca aca ctg gct aag aat ttg cag aaa cac 340
Val Thr Asn Ser Gly Lys Thr Thr Leu Ala Lys Asn Leu Gln Lys His
11 16 21 26
ctc cca aat tgc agt gtc ata tct cag gat gat ttc ttc aag cca gag 388
Leu Pro Asn Cys Ser Val Ile Ser Gln Asp Asp Phe Phe Lys Pro Glu
27 32 37 42
tct gag ata gag aca gat aaa aat gga ttt ttg cag tac gat gtg ctt 436
Ser Glu Ile Glu Thr Asp Lys Asn Gly Phe Leu Gln Tyr Asp Val Leu
43 48 53 58
gaa gca ctt aac atg gaa aaa atg atg tca gcc att tcc tgc tgg atg 484
Glu Ala Leu Asn Met Glu Lys Met Met Ser Ala Ile Ser Cys Trp Met
59 64 69 74
gaa agc gca aga cac tct gtg gta tca aca gac cag gaa agt gct gag 532
Glu Ser Ala Arg His Ser Val Val Ser Thr Asp Gln Glu Ser Ala Glu
75 80 85 90
gaa att ccc att tta atc atc gaa ggt ttt ctt ctt ttt aat tat aag 580
Glu Ile Pro Ile Leu Ile Ile Glu Gly Phe Leu Leu Phe Asn Tyr Lys
91 96 101 106
ccc ctt gac act ata tgg aat aga agc tat ttc ctg act att cca tat 628
Pro Leu Asp Thr Ile Trp Asn Arg Ser Tyr Phe Leu Thr Ile Pro Tyr
107 112 117 122
gaa gaa tgt aaa agg agg agg agt aca agg gtc tat cag cct cca gac 676
Glu Glu Cys Lys Arg Arg Arg Ser Thr Arg Val Tyr Gln Pro Pro Asp
123 128 133 138
tct ccg gga tac ttt gat ggc cat gtg tgg ccc atg tat cta aag tac 724
Ser Pro Gly Tyr Phe Asp Gly His Val Trp Pro Met Tyr Leu Lys Tyr
139 144 149 154
aga caa gaa atg cag gac atc aca tgg gaa gtt gtg tac ctg gat gga 772
Arg Gln Glu Met Gln Asp Ile Thr Trp Glu Val Val Tyr Leu Asp Gly
155 160 165 170
aca aaa tct gaa gag gac ctc ttt ttg caa gta tat gaa gat cta ata 820
Thr Lys Ser Glu Glu Asp Leu Phe Leu Gln Val Tyr Glu Asp Leu Ile
171 176 181 186
caa gaa cta gca aag caa aag tgt ttg caa gtg aca gca taa agacgga 869
Gln Glu Leu Ala Lys Gln Lys Cys Leu Gln Val Thr Ala *

187

192

197

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 acgctgcttg gcgaaccctg gtgttcaagt tccagaggaa cgggatgagc tcctgag 177
 atg gaa gat ctg tcc tct cca gac tcc acc ctt ctc caa ggg gga cat 225
 Met Glu Asp Leu Ser Ser Pro Asp Ser Thr Leu Leu Gln Gly Gly His
 1 5 10 15
 aat cta ctc tca tca gcc agt ttt cag gaa gcg gtg act ttc aag gat 273
 Asn Leu Leu Ser Ser Ala Ser Phe Gln Glu Ala Val Thr Phe Lys Asp
 17 22 27 32
 gtg ata gtg gac ttt acc cag gaa gaa tgg aaa cag ctg gac cct ggc 321
 Val Ile Val Asp Phe Thr Gln Glu Glu Trp Lys Gln Leu Asp Pro Gly
 33 38 43 48
 cag aga gat ttg ttc agg gat gtg aca ttg gaa aat tat aca cac ctg 369
 Gln Arg Asp Leu Phe Arg Asp Val Thr Leu Glu Asn Tyr Thr His Leu
 49 54 59 64
 gtc tct ata gga ctc caa gtt tct aaa cct gat gtg att tcc cag tta 417
 Val Ser Ile Gly Leu Gln Val Ser Lys Pro Asp Val Ile Ser Gln Leu
 65 70 75 80
 gag caa ggg aca gag cca tgg atc atg gag cca agc att cca gta ggt 465
 Glu Gln Gly Thr Glu Pro Trp Ile Met Glu Pro Ser Ile Pro Val Gly
 81 86 91 96
 acc tgt gca gac tgg gag aca aga ctt gaa aat agt gtg tca gcc cca 513

Thr	Cys	Ala	Asp	Trp	Glu	Thr	Arg	Leu	Glu	Asn	Ser	Val	Ser	Ala	Pro	
97					102					107					112	
gag cct gac att tct gaa gaa gag cta tct cca gag gta ata gtg gaa 561																
Glu	Pro	Asp	Ile	Ser	Glu	Glu	Glu	Leu	Ser	Pro	Glu	Val	Ile	Val	Glu	
113					118					123					128	
aaa cac aaa aga gat gat tct tgg agt tcc aac ttg cta gaa agt tgg 609																
Lys	His	Lys	Arg	Asp	Asp	Ser	Trp	Ser	Ser	Asn	Leu	Leu	Glu	Ser	Trp	
129					134					139					144	
gaa tat gaa ggc agt tta gag aga cag cag gca aac caa cag aca ctg 657																
Glu	Tyr	Glu	Gly	Ser	Leu	Glu	Arg	Gln	Gln	Ala	Asn	Gln	Gln	Thr	Leu	
145					150					155					160	
cca aag gaa ata aag gta acc gaa aag aca ata ccc agt tgg gaa aaa 705																
Pro	Lys	Glu	Ile	Lys	Val	Thr	Glu	Lys	Thr	Ile	Pro	Ser	Trp	Glu	Lys	
161					166					171					176	
ggc cct gta aat aat gaa ttt ggg aaa agt gtc aat gtg agt tca aac 753																
Gly	Pro	Val	Asn	Asn	Glu	Phe	Gly	Lys	Ser	Val	Asn	Val	Ser	Ser	Asn	
177					182					187					192	
ctt gta aca caa gaa cca tct cca gaa gag acc tct act aaa aga agc 801																
Leu	Val	Thr	Gln	Glu	Pro	Ser	Pro	Glu	Glu	Thr	Ser	Thr	Lys	Arg	Ser	
193					198					203					208	
atc aaa cag aat tca aac cca gtt aaa aaa gag aaa tct tgt aag tgc 849																
Ile	Lys	Gln	Asn	Ser	Asn	Pro	Val	Lys	Lys	Glu	Lys	Ser	Cys	Lys	Cys	
209					214					219					224	
aat gaa tgt ggg aaa gcc ttt agt tat tgt tca gct ctt att cgc cat 897																
Asn	Glu	Cys	Gly	Lys	Ala	Phe	Ser	Tyr	Cys	Ser	Ala	Leu	Ile	Arg	His	
225					230					235					240	
cag aga aca cat act gga gaa aaa ccc tac aaa tgt aat gaa tgt gaa 945																
Gln	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Asn	Glu	Cys	Glu	
241					246					251					256	
aaa gcc ttc agc cgg agt gaa aac ctt ata aac cat caa aga att cat 993																
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257					262					267					272	
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Thr	Gly	Asp	Lys	Pro	Tyr	Lys	Cys	Asp	Gln	Cys	Gly	Lys	Gly	Phe	Ile	
273					278					283					288	
gag ggt cca tct ctt act caa cat caa aga att cat act gga gaa aaa 1089																
Glu	Gly	Pro	Ser	Leu	Thr	Gln	His	Gln	Arg	Ile	His	Thr	Gly	Glu	Lys	
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cca tat aaa tgt gat gaa tgt ggg aaa gcc ttt agt cag agg acc cat 1137																
Pro	Tyr	Lys	Cys	Asp	Glu	Cys	Gly	Lys	Ala	Phe	Ser	Gln	Arg	Thr	His	
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ctt gtt cag cat cag aga att cat act ggc gag aag cca tac act tgt 1185																
Leu	Val	Gln	His	Gln	Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Thr	Cys	

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aat gag tgt gga aaa gcc ttt agc cag aga ggc cac ttt atg gaa cat				1233
Asn Glu Cys Gly Lys Ala Phe Ser Gln Arg Gly His Phe Met Glu His				
337	342	347	352	
cag aaa att cat acg gga gaa aaa cct ttt aaa tgt gat gaa tgt gat				1281
Gln Lys Ile His Thr Gly Glu Lys Pro Phe Lys Cys Asp Glu Cys Asp				
353	358	363	368	
aaa acc ttc acc agg agc aca cac ctt act caa cat caa aaa att cat				1329
Lys Thr Phe Thr Arg Ser Thr His Leu Thr Gln His Gln Lys Ile His				
369	374	379	384	
act gga gaa aaa acc tat aaa tgt aat gaa tgt gga aag gcc ttc aac				1377
Thr Gly Glu Lys Thr Tyr Lys Cys Asn Glu Cys Gly Lys Ala Phe Asn				
385	390	395	400	
ggg ccc tca act ttt atc cgt cat cat atg att cat act ggt gaa aaa				1425
Gly Pro Ser Thr Phe Ile Arg His His Met Ile His Thr Gly Glu Lys				
401	406	411	416	
ccg tac gaa tgc aat gaa tgt ggg aaa gcc ttc agc cag cac tca aac				1473
Pro Tyr Glu Cys Asn Glu Cys Gly Lys Ala Phe Ser Gln His Ser Asn				
417	422	427	432	
ctc act cag cat caa aaa act cat act ggg gag aaa ccc tat gat tgt				1521
Leu Thr Gln His Gln Lys Thr His Thr Gly Glu Lys Pro Tyr Asp Cys				
433	438	443	448	
gca gaa tgt gga aaa tct ttt agt tac tgg tca tcc ctt gct caa cac				1569
Ala Glu Cys Gly Lys Ser Phe Ser Tyr Trp Ser Ser Leu Ala Gln His				
449	454	459	464	
ctg aaa att cat act gga gaa aaa cct tac aaa tgc aat gaa tgt gga				1617
Leu Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Asn Glu Cys Gly				
465	470	475	480	
aag gcc ttc agt tac tgc tca tcc ctt act caa cat cgg aga att cac				1665
Lys Ala Phe Ser Tyr Cys Ser Ser Leu Thr Gln His Arg Arg Ile His				
481	486	491	496	
acg aga gaa aag ccc ttt gaa tgc agt gaa tgt gga aag gct ttc agt				1713
Thr Arg Glu Lys Pro Phe Glu Cys Ser Glu Cys Gly Lys Ala Phe Ser				
497	502	507	512	
tat ctc tca aac ctt aat cag cat cag aaa act cat act caa gag aaa				1761
Tyr Leu Ser Asn Leu Asn Gln His Gln Lys Thr His Thr Gln Glu Lys				
513	518	523	528	
gct tat gaa tgt aaa gaa tgt ggg aaa gct ttt att cgg agt tca tct				1809
Ala Tyr Glu Cys Lys Glu Cys Gly Lys Ala Phe Ile Arg Ser Ser Ser				
529	534	539	544	
ctt gct aag cat gaa aga att cat act gga gag aaa ccc tat cag tgt				1857
Leu Ala Lys His Glu Arg Ile His Thr Gly Glu Lys Pro Tyr Gln Cys				
545	550	555	560	

cat gaa tgt ggg aaa acc ttc agt tat ggt tca tcc ctt att cag cat 1905
His Glu Cys Gly Lys Thr Phe Ser Tyr Gly Ser Ser Leu Ile Gln His
561 566 571 576

agg aag atc cat act gga gaa cga cct tac aag tgt aat gag tgt ggg 1953
Arg Lys Ile His Thr Gly Glu Arg Pro Tyr Lys Cys Asn Glu Cys Gly
577 582 587 592

aga gca ttc aac cag aac ata cac ctt aca cag cat aag aga att cat 2001
Arg Ala Phe Asn Gln Asn Ile His Leu Thr Gln His Lys Arg Ile His
593 598 603 608

aca gga gcc aag cct tat gag tgt gct gag tgt ggt aaa gcc ttt cga 2049
Thr Gly Ala Lys Pro Tyr Glu Cys Ala Glu Cys Gly Lys Ala Phe Arg
609 614 619 624

cat tgt tca tct ctt gct caa cat caa aaa act cac aca gaa gaa aaa 2097
His Cys Ser Ser Leu Ala Gln His Gln Lys Thr His Thr Glu Glu Lys
625 630 635 640

ccc tac cag tgt aat aaa tgt gaa aag acc ttt agc cag agc tcc cat 2145
Pro Tyr Gln Cys Asn Lys Cys Glu Lys Thr Phe Ser Gln Ser Ser His
641 646 651 656

cta act cag cat caa cga att cac act ggg gag aag ccc tat aag tgc 2193
Leu Thr Gln His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys
657 662 667 672

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Asn Glu Cys Asp Lys Ala Phe Ser Arg Ser Thr His Leu Thr Glu His
673 678 683 688

cag aat act cat act gga gag aaa cct tat aac tgt aat gaa tgc aga 2289
Gln Asn Thr His Thr Gly Glu Lys Pro Tyr Asn Cys Asn Glu Cys Arg
689 694 699 704

aag act ttt agc cag agc aca tat ctc att cag cac cag aga att cat 2337
Lys Thr Phe Ser Gln Ser Thr Tyr Leu Ile Gln His Gln Arg Ile His
705 710 715 720

tca gga gag aag cct ttt gga tgt aat gat tgt gga aaa tcc ttc aga 2385
Ser Gly Glu Lys Pro Phe Gly Cys Asn Asp Cys Gly Lys Ser Phe Arg
721 726 731 736

tat cgc tct gct ctc aac aaa cat cag aga ctg cat cct ggc ata tga 2433
Tyr Arg Ser Ala Leu Asn Lys His Gln Arg Leu His Pro Gly Ile *
737 742 747 752

caattctagg aacatcataa atttagggga gatatttact ttagtttgct cttttgttaa 2493

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tgacattaga aaactctact gttttaagct ttagtttcct ttatggaatg aaggctttgg 2673

agtagattat ttcaaaggta gtttggagtt ttataatcag ttttgtatat ttacaatatt 2733
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 ttccccgtcc ccgcgctcct ccgcccgggt ccgccagccg aggccgctcc cgagcgtcgg 180
 aag atg ccg gcc gtg tcc aag ggg gac ggg atg cgg ggc ctg gcg gtc 228
 Met Pro Ala Val Ser Lys Gly Asp Gly Met Arg Gly Leu Ala Val
 1 5 10
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 Phe Ile Ser Asp Ile Arg Asn Cys Lys Ser Lys Glu Ala Glu Ile Lys
 16 21 26 31
 agg ata aac aag gaa ctg gca aat atc aga tca aaa ttt aaa ggt gac 324
 Arg Ile Asn Lys Glu Leu Ala Asn Ile Arg Ser Lys Phe Lys Gly Asp
 32 37 42 47
 aag gct ctt gat ggc tat agt aaa aaa aag tac gtc tgc aag ttg ctc 372
 Lys Ala Leu Asp Gly Tyr Ser Lys Lys Lys Tyr Val Cys Lys Leu Leu
 48 53 58 63
 ttc atc ttt ctc ctt ggt cat gac att gac ttt gga cac atg gag gct 420
 Phe Ile Phe Leu Leu Gly His Asp Ile Asp Phe Gly His Met Glu Ala
 64 69 74 79
 gtg aac ctg ctg agt tca aac aga tac acg gaa aag cag atc ggc tac 468
 Val Asn Leu Leu Ser Ser Asn Arg Tyr Thr Glu Lys Gln Ile Gly Tyr
 80 85 90 95
 ctt ttc atc tct gtg ttg gtg aac tca aac agt gag ctg atc cgc ctg 516
 Leu Phe Ile Ser Val Leu Val Asn Ser Asn Ser Glu Leu Ile Arg Leu
 96 101 106 111

atc aac aac gcc atc aag aat gac ctg gcc agc cgc aac ccc acc ttc Ile Asn Asn Ala Ile Lys Asn Asp Leu Ala Ser Arg Asn Pro Thr Phe 112 117 122 127	564
atg ggc ctg gcc ctg cac tgc atc gcc agc gtg ggc agc cgg gag atg Met Gly Leu Ala Leu His Cys Ile Ala Ser Val Gly Ser Arg Glu Met 128 133 138 143	612
gcc gag gcc ttc gcc ggg gag atc cct aag gtc ctc gta gcc gga gac Ala Glu Ala Phe Ala Gly Glu Ile Pro Lys Val Leu Val Ala Gly Asp 144 149 154 159	660
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gca tcc aca gat ctc cag gat tac act tac tat ttt gtc ccg gct ccc Ala Ser Thr Asp Leu Gln Asp Tyr Thr Tyr Tyr Phe Val Pro Ala Pro 240 245 250 255	948
tgg ctg tct gtc aaa ctg ctg aga ctg ctg cag tgc tac cca ccc cca Trp Leu Ser Val Lys Leu Leu Arg Leu Leu Gln Cys Tyr Pro Pro Pro 256 261 266 271	996
gac cct gca gtg cga ggc cgc ctg act gag tgc ctg gag acc atc ctg Asp Pro Ala Val Arg Gly Arg Leu Thr Glu Cys Leu Glu Thr Ile Leu 272 277 282 287	1044
aac aaa gcc caa gaa ccg ccc aag tcg aag aag gtc cag cac tcc aac Asn Lys Ala Gln Glu Pro Pro Lys Ser Lys Lys Val Gln His Ser Asn 288 293 298 303	1092
gcg aag aat gcc gtg ctc ttc gag gcc atc agc tta atc att cac cat Ala Lys Asn Ala Val Leu Phe Glu Ala Ile Ser Leu Ile Ile His His 304 309 314 319	1140
gac agt gag ccg aac ctg ctc gtc cgt gcc tgc aac cag ttg ggc cag Asp Ser Glu Pro Asn Leu Leu Val Arg Ala Cys Asn Gln Leu Gly Gln 320 325 330 335	1188
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Phe	Leu	Gln	His	Arg	Glu	Thr	Asn	Leu	Arg	Tyr	Leu	Ala	Leu	Glu	Ser		
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Met	Cys	Thr	Leu	Ala	Ser	Ser	Glu	Phe	Ser	His	Glu	Ala	Val	Lys	Thr		
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cac	atc	gag	acg	gtc	atc	aac	gcc	ctg	aag	act	gag	cgg	gac	gtg	agc	1332	
His	Ile	Glu	Thr	Val	Ile	Asn	Ala	Leu	Lys	Thr	Glu	Arg	Asp	Val	Ser		
368					373					378					383		
gtg	cgg	cag	cgg	gcc	gtg	gac	ctc	ctc	tac	gcc	atg	tgc	gac	cgc	agc	1380	
Val	Arg	Gln	Arg	Ala	Val	Asp	Leu	Leu	Tyr	Ala	Met	Cys	Asp	Arg	Ser		
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Asn	Ala	Pro	Gln	Ile	Val	Ala	Glu	Met	Leu	Ser	Tyr	Leu	Glu	Thr	Ala		
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Asp	Tyr	Ser	Ile	Arg	Glu	Glu	Ile	Val	Leu	Lys	Val	Ala	Ile	Leu	Ala		
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Glu	Lys	Tyr	Ala	Val	Asp	Tyr	Thr	Trp	Tyr	Val	Asp	Thr	Ile	Leu	Asn		
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Leu	Ile	Arg	Ile	Ala	Gly	Asp	Tyr	Val	Ser	Glu	Glu	Val	Trp	Tyr	Arg		
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Lys	Thr	Val	Phe	Glu	Ala	Leu	Gln	Ala	Pro	Ala	Cys	His	Glu	Asn	Leu		
480					485					490					495		
gtc	aaa	gtg	ggc	ggc	tac	atc	ctg	ggg	gag	ttt	gga	aac	ttg	ata	gct	1716	
Val	Lys	Val	Gly	Gly	Tyr	Ile	Leu	Gly	Glu	Phe	Gly	Asn	Leu	Ile	Ala		
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Gly	Asp	Pro	Arg	Ser	Ser	Pro	Leu	Ile	Gln	Phe	His	Leu	Leu	His	Ser		
512					517					522					527		
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Lys	Phe	His	Leu	Cys	Ser	Val	Pro	Thr	Arg	Ala	Leu	Leu	Leu	Ser	Thr		
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tac	atc	aag	ttc	gtg	aac	ctc	ttc	ccg	gag	gtg	aag	ccc	acc	atc	cag	1860	
Tyr	Ile	Lys	Phe	Val	Asn	Leu	Phe	Pro	Glu	Val	Lys	Pro	Thr	Ile	Gln		
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Gln Gln Arg Ala Val Glu Tyr Leu Arg Leu Ser Thr Val Ala Ser Thr				
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gac att ctg gcg acc gtg ctg gag gag atg ccc cca ttc ccg gag cgg				2004
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592	597	602	607	
gag tcc tcc atc ttg gca aag ctc aag aag aag aag ggc ccc agc acg				2052
Glu Ser Ser Ile Leu Ala Lys Leu Lys Lys Lys Lys Gly Pro Ser Thr				
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Val Thr Asp Leu Glu Asp Thr Lys Arg Asp Arg Ser Val Asp Val Asn				
624	629	634	639	
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Gly Gly Pro Glu Pro Ala Pro Ala Ser Thr Ser Ala Val Ser Thr Pro				
640	645	650	655	
tct ccg tcg gca gac ctg ctg ggt ctc ggg gct gcc ccc cct gcc ccc				2196
Ser Pro Ser Ala Asp Leu Leu Gly Leu Gly Ala Ala Pro Pro Ala Pro				
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gcg ggc ccc cca ccc tcc tcc ggc ggc agc ggg ctg ctc gtg gac gtg				2244
Ala Gly Pro Pro Pro Ser Ser Gly Gly Ser Gly Leu Leu Val Asp Val				
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ttc tca gac tcg gcc tct gtg gtc gcg cct ctc gct cct ggc tcc gaa				2292
Phe Ser Asp Ser Ala Ser Val Val Ala Pro Leu Ala Pro Gly Ser Glu				
688	693	698	703	
gac aac ttt gcc agg ttt gtt tgt aaa aac aat ggt gtg ttg ttt gaa				2340
Asp Asn Phe Ala Arg Phe Val Cys Lys Asn Asn Gly Val Leu Phe Glu				
704	709	714	719	
aac cag ctg ctt caa att gga ctt aag tct gaa ttt cgg cag aat tta				2388
Asn Gln Leu Leu Gln Ile Gly Leu Lys Ser Glu Phe Arg Gln Asn Leu				
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Gly Arg Met Phe Ile Phe Tyr Gly Asn Lys Thr Ser Thr Gln Phe Leu				
736	741	746	751	
aac ttt acc cca aca cta atc tgt tca gac gac ctt cag cct aac ctg				2484
Asn Phe Thr Pro Thr Leu Ile Cys Ser Asp Asp Leu Gln Pro Asn Leu				
752	757	762	767	
aac ctg cag acc aag ccc gtg gac ccg acc gtg gag ggg ggc gcg cag				2532
Asn Leu Gln Thr Lys Pro Val Asp Pro Thr Val Glu Gly Gly Ala Gln				
768	773	778	783	
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Val Gln Gln Val Val Asn Ile Glu Cys Val Ser Asp Phe Thr Glu Ala				
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 atg tca ctg agt cca cca tgc ttt aca gaa gaa gac aga ttt agt ctg 165
 Met Ser Leu Ser Pro Pro Cys Phe Thr Glu Glu Asp Arg Phe Ser Leu

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gga gct gaa tgt gaa ttg agt aga cgt cag tat gca gaa cag gaa ttg Gly Ala Glu Cys Glu Leu Ser Arg Arg Gln Tyr Ala Glu Gln Glu Leu 257 262 267 272	933
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aca cat gaa gta gaa gtg caa tac tac aat att aaa aga caa aac gct Thr His Glu Val Glu Val Gln Tyr Tyr Asn Ile Lys Arg Gln Asn Ala 305 310 315 320	1077
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cta gat gag gta gac cac aaa att ctg gaa gca aag aaa gct ctc tct Leu Asp Glu Val Asp His Lys Ile Leu Glu Ala Lys Lys Ala Leu Ser 353 358 363 368	1221
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cct cct gga tca tta gcc aga agc agc agc ctg tgc cgt tca cgc cgc Pro Pro Gly Ser Leu Ala Arg Ser Ser Ser Leu Cys Arg Ser Arg Arg 449 454 459 464	1509

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His Ala Pro His Pro Ser His Pro Arg His Pro His His Pro Gln His	
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Thr Pro His Ser Leu Pro Ser Pro Asp Pro Asp Ile Leu Ser Val Ser	
497 502 507 512	
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Ser Cys Pro Ala Leu Tyr Arg Asn Glu Glu Glu Glu Glu Ala Ile Tyr	
513 518 523 528	
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Phe Ser Ala Glu Lys Gln Trp Asn Thr Arg Glu Cys Ala Val Gly Asp	
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Ser Gln Gly Pro His Val His Gly Leu Val Arg Phe Asp Lys Asp Phe	
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Gly Ser Tyr Ser Glu Tyr Glu Arg Lys His Trp Glu Val Ser Met Pro	
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Asp Thr Ala Ser Glu Cys Asp Ser Leu Asn Ser Ser Ile Gly Arg Lys	
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Gln Ser Pro Pro Leu Ser Leu Glu Ile Tyr Gln Thr Leu Ser Pro Arg	
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Lys Ile Ser Arg Asp Glu Val Ser Leu Glu Asp Ser Ser Arg Gly Asp	
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Leu Thr Glu Thr Lys Ser Met Ile Phe Ser Pro Ala Ser Lys Val Tyr	
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Asn Gly Ile Leu Glu Lys Ser Cys Ser Met Asn Gln Leu Ser Ser Gly	
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Ile Pro Val Pro Lys Pro Arg His Thr Ser Cys Ser Ser Ala Gly Asn	
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Ile Pro His Asp Leu Cys His Asn Gly Glu Lys Ser Lys Lys Pro Ser	
705	720
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Lys Ile Lys Ser Leu Phe Lys Lys Lys Ser Lys *	
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Cys Phe Ser Ser Ile His Val Lys Thr Asp Lys His Ala Gln Arg Phe
17 22 27 32

ctt tca aga acc ttt gca ctt gcg gaa ttg agg aag tca tgg tat tca 144
Leu Ser Arg Thr Phe Ala Leu Ala Glu Leu Arg Lys Ser Trp Tyr Ser
33 38 43 48

acc cac tct ctt gtt gga gac aaa aat att atc ctg atg gga cct cct 192
Thr His Ser Leu Val Gly Asp Lys Asn Ile Ile Leu Met Gly Pro Pro
49 54 59 64

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65 70 75 80

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Cys Cys Val Ile Asp Val Asp Asp Asp Ile Leu Glu Lys Thr Trp Asn
81 86 91 96

atg agt gtg tct gaa aaa tta cag gat gtt ggt aat gag caa ttt tta 336
Met Ser Val Ser Glu Lys Leu Gln Asp Val Gly Asn Glu Gln Phe Leu
97 102 107 112

gaa gag gaa gga aaa gct gtg tta aac ttc tct gca tct gga agt gtg 384
Glu Glu Glu Gly Lys Ala Val Leu Asn Phe Ser Ala Ser Gly Ser Val
113 118 123 128

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129 134 139 144

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145 150 155 160

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161 166 171 176

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177 182 187 192

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193 198 203 208

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209 214 219 224

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gtt gag tca gat ttt gat ttt tgc cag aca gct ata aaa aga att ttt	1344
Val Glu Ser Asp Phe Asp Phe Cys Gln Thr Ala Ile Lys Arg Ile Phe	
433 438 443 448	
aat gat tct gat ttt act ggc ttt ctt act gtg gaa tat gga aca atc	1392

Asn Asp Ser Asp Phe Thr Gly Phe Leu Thr Val Glu Tyr Gly Thr Ile	
449 454 459 464	
tta agt tcg gct aac tcc ata aac tgg ggc cga cta ctt ccg cag gta	1440
Leu Ser Ser Ala Asn Ser Ile Asn Trp Gly Arg Leu Leu Pro Gln Val	
465 470 475 480	
gtt tat cat gct tcc gca tat ctt gat ctt gtt agt caa gga ttt att	1488
Val Tyr His Ala Ser Ala Tyr Leu Asp Leu Val Ser Gln Gly Phe Ile	
481 486 491 496	
tct ttt gga agc cca gtc gat gtc tgt att ccc aca gga aac ttt ggt	1536
Ser Phe Gly Ser Pro Val Asp Val Cys Ile Pro Thr Gly Asn Phe Gly	
497 502 507 512	
aac att tta gca gca gtg tat gcc aaa atg atg gga atc ccg att cga	1584
Asn Ile Leu Ala Ala Val Tyr Ala Lys Met Met Gly Ile Pro Ile Arg	
513 518 523 528	
aaa ttt atc tgt gcc tct aat cag aac cat gtt ttg act gat ttt ata	1632
Lys Phe Ile Cys Ala Ser Asn Gln Asn His Val Leu Thr Asp Phe Ile	
529 534 539 544	
aaa aca gga cat tat gat cta agg gaa aga aaa tta gca caa acc ttt	1680
Lys Thr Gly His Tyr Asp Leu Arg Glu Arg Lys Leu Ala Gln Thr Phe	
545 550 555 560	
tca ccg tca ata gat att ctc aaa tct tca aac cta gaa cga cat tta	1728
Ser Pro Ser Ile Asp Ile Leu Lys Ser Ser Asn Leu Glu Arg His Leu	
561 566 571 576	
cac ttg atg gct aat aaa gat gga cag cta atg aca gaa tta ttt aat	1776
His Leu Met Ala Asn Lys Asp Gly Gln Leu Met Thr Glu Leu Phe Asn	
577 582 587 592	
cga tta gaa agt cag cat cat ttc cag ata gaa aag gct cta gtt gag	1824
Arg Leu Glu Ser Gln His His Phe Gln Ile Glu Lys Ala Leu Val Glu	
593 598 603 608	
aaa ctt cag cag gat ttt gta gct gac tgg tgc tct gag gga gag tgc	1872
Lys Leu Gln Gln Asp Phe Val Ala Asp Trp Cys Ser Glu Gly Glu Cys	
609 614 619 624	
cta gca gct att aac tcc acc tat aat act tca ggg tat att ttg gat	1920
Leu Ala Ala Ile Asn Ser Thr Tyr Asn Thr Ser Gly Tyr Ile Leu Asp	
625 630 635 640	
cca cac act gct gtt gca aaa gtg gtt gca gat agg gtg caa gac aaa	1968
Pro His Thr Ala Val Ala Lys Val Val Ala Asp Arg Val Gln Asp Lys	
641 646 651 656	
act tgc cct gtg att atc tca tct aca gcc cat tac tca aag ttt gca	2016
Thr Cys Pro Val Ile Ile Ser Ser Thr Ala His Tyr Ser Lys Phe Ala	
657 662 667 672	
cct gct atc atg cag gct tta aag att aaa gaa atc aat gag act tca	2064
Pro Ala Ile Met Gln Ala Leu Lys Ile Lys Glu Ile Asn Glu Thr Ser	

673	678	683	688	
tca agt cag ctc tat ttg ctg ggt tca tac aat gca tta cct cca ctg				2112
Ser Ser Gln Leu Tyr Leu Leu Gly Ser Tyr Asn Ala Leu Pro Pro Leu				
689	694	699	704	
cat gag gct tta tta gag aga aca aaa cag caa gag aag atg gag tac				2160
His Glu Ala Leu Leu Glu Arg Thr Lys Gln Gln Glu Lys Met Glu Tyr				
705	710	715	720	
cag gtc tgt gca gct gat atg aat gtc ttg aag agt cat gtg gaa caa				2208
Gln Val Cys Ala Ala Asp Met Asn Val Leu Lys Ser His Val Glu Gln				
721	726	731	736	
ctt gtc caa aat caa ttc ata tga aagctttcag agtaaatttt tttttctagc				2262
Leu Val Gln Asn Gln Phe Ile *				
737	742			
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tacagtgtta gctaagtttg gaaagaagga aaaaagaaaa tccctgggcc ccttttcttt				180
tggtctttgc caaagtcgtc gttgtagtct ttttgcccaa ggctgttggtg tttttagagg				240
tgctatctcc agttccttgc actcctgtta acaagcacct cagcgagagc agcagcagcg				300
atagcagccg cagaagagcc agcggggctg cctagtgtc	atg acc agg gcg gga			354
	Met Thr Arg Ala Gly			
	1			
gat cac aac cgc cag aga gga tgc tgt gga tcc ttg gcc gac tac ctg				402
Asp His Asn Arg Gln Arg Gly Cys Cys Gly Ser Leu Ala Asp Tyr Leu				
6	11	16	21	
acc tct gca aaa ttc ctt ctc tac ctt ggt cat tct ctc tct act tgg				450
Thr Ser Ala Lys Phe Leu Leu Tyr Leu Gly His Ser Leu Ser Thr Trp				
22	27	32	37	
gga gat cgg atg tgg cac ttt gcg gtg tct gtg ttt ctg gta gag ctc				498
Gly Asp Arg Met Trp His Phe Ala Val Ser Val Phe Leu Val Glu Leu				

38	43	48	53	
tat gga aac agc ctc ctt ttg aca gca gtc	tac ggg ctg gtg gtg gca	546		
Tyr Gly Asn Ser Leu Leu Leu Thr Ala Val	Tyr Gly Leu Val Val Ala			
54	59	64	69	
ggg tct gtt ctg gtc ctg gga gcc atc atc ggt gac tgg gtg gac aag	594			
Gly Ser Val Leu Val Leu Gly Ala Ile Ile Gly Asp Trp Val Asp Lys				
70	75	80	85	
aat gct aga ctt aaa gtg gcc cag acc tcg ctg gtg gta cag aat gtt	642			
Asn Ala Arg Leu Lys Val Ala Gln Thr Ser Leu Val Val Gln Asn Val				
86	91	96	101	
tca gtc atc ctg tgt gga atc atc ctg atg atg gtt ttc tta cat aaa	690			
Ser Val Ile Leu Cys Gly Ile Ile Leu Met Met Val Phe Leu His Lys				
102	107	112	117	
cat gag ctt ctg acc atg tac cat gga tgg gtt ctc act tcc tgc tat	738			
His Glu Leu Leu Thr Met Tyr His Gly Trp Val Leu Thr Ser Cys Tyr				
118	123	128	133	
atc ctg atc atc act att gca aat att gca aat ttg gcc agt act gct	786			
Ile Leu Ile Ile Thr Ile Ala Asn Ile Ala Asn Leu Ala Ser Thr Ala				
134	139	144	149	
act gca atc aca atc caa agg gat tgg att gtt gtt gtt gca gga gaa	834			
Thr Ala Ile Thr Ile Gln Arg Asp Trp Ile Val Val Val Ala Gly Glu				
150	155	160	165	
gac aga agc aaa cta gca aat atg aat gcc aca ata cga agg att gac	882			
Asp Arg Ser Lys Leu Ala Asn Met Asn Ala Thr Ile Arg Arg Ile Asp				
166	171	176	181	
cag tta acc aac atc tta gcc ccc atg gct gtt ggc cag att atg aca	930			
Gln Leu Thr Asn Ile Leu Ala Pro Met Ala Val Gly Gln Ile Met Thr				
182	187	192	197	
ttt ggc tcc cca gtc atc ggc tgt ggc ttt att tcg gga tgg aac ttg	978			
Phe Gly Ser Pro Val Ile Gly Cys Gly Phe Ile Ser Gly Trp Asn Leu				
198	203	208	213	
gta tcc atg tgc gtg gag tac gtt ctg ctc tgg aag gtt tac cag aaa	1026			
Val Ser Met Cys Val Glu Tyr Val Leu Leu Trp Lys Val Tyr Gln Lys				
214	219	224	229	
acc cca gct cta gct gtg aaa gct ggt ctt aaa gaa gag gaa act gaa	1074			
Thr Pro Ala Leu Ala Val Lys Ala Gly Leu Lys Glu Glu Glu Thr Glu				
230	235	240	245	
ttg aaa cag ctg aat tta cac aaa gat act gag cca aaa ccc ctg gag	1122			
Leu Lys Gln Leu Asn Leu His Lys Asp Thr Glu Pro Lys Pro Leu Glu				
246	251	256	261	
gga act cat cta atg ggt gtg aaa gac tct aac atc cat gag ctt gaa	1170			
Gly Thr His Leu Met Gly Val Lys Asp Ser Asn Ile His Glu Leu Glu				
262	267	272	277	

cat gag caa gag cct act tgt gcc tcc cag atg gct gag ccc ttc cgt	1218
His Glu Gln Glu Pro Thr Cys Ala Ser Gln Met Ala Glu Pro Phe Arg	
278 283 288 293	
acc ttc cga gat gga tgg gtc tcc tac tac aac cag cct gtg ttt ctg	1266
Thr Phe Arg Asp Gly Trp Val Ser Tyr Tyr Asn Gln Pro Val Phe Leu	
294 299 304 309	
gct ggc atg ggt ctt gct ttc ctt tat atg act gtc ctg ggc ttt gac	1314
Ala Gly Met Gly Leu Ala Phe Leu Tyr Met Thr Val Leu Gly Phe Asp	
310 315 320 325	
tgc atc acc aca ggg tac gcc tac act cag gga ctg agt ggt tcc atc	1362
Cys Ile Thr Thr Gly Tyr Ala Tyr Thr Gln Gly Leu Ser Gly Ser Ile	
326 331 336 341	
ctc agt att ttg atg gga gca tca gct ata act gga ata atg gga act	1410
Leu Ser Ile Leu Met Gly Ala Ser Ala Ile Thr Gly Ile Met Gly Thr	
342 347 352 357	
gta gct ttt act tgg cta cgt cga aaa tgt ggt ttg gtt cgg aca ggt	1458
Val Ala Phe Thr Trp Leu Arg Arg Lys Cys Gly Leu Val Arg Thr Gly	
358 363 368 373	
ctg atc tca gga ttg gca cag ctt tcc tgt ttg atc ttg tgt gtg atc	1506
Leu Ile Ser Gly Leu Ala Gln Leu Ser Cys Leu Ile Leu Cys Val Ile	
374 379 384 389	
tct gta ttc atg cct gga agc ccc ctg gac ttg tcc gtt tct cct ttt	1554
Ser Val Phe Met Pro Gly Ser Pro Leu Asp Leu Ser Val Ser Pro Phe	
390 395 400 405	
gaa gat atc cga tca agg ttc att caa gga gag tca att aca cct acc	1602
Glu Asp Ile Arg Ser Arg Phe Ile Gln Gly Glu Ser Ile Thr Pro Thr	
406 411 416 421	
aag ata cct gaa att aca act gaa ata tac atg tct aat ggg tct aat	1650
Lys Ile Pro Glu Ile Thr Thr Glu Ile Tyr Met Ser Asn Gly Ser Asn	
422 427 432 437	
tct gct aat att gtc ccg gag aca agt cct gaa tct gtg ccc ata atc	1698
Ser Ala Asn Ile Val Pro Glu Thr Ser Pro Glu Ser Val Pro Ile Ile	
438 443 448 453	
tct gtc agt ctg ctg ttt gca ggc gtc att gct gct aga atc ggt ctt	1746
Ser Val Ser Leu Leu Phe Ala Gly Val Ile Ala Ala Arg Ile Gly Leu	
454 459 464 469	
tgg tcc ttt gat tta act gtg aca cag ttg ctg caa gaa aat gta att	1794
Trp Ser Phe Asp Leu Thr Val Thr Gln Leu Leu Gln Glu Asn Val Ile	
470 475 480 485	
gaa tct gaa aga ggc att ata aat ggt gta cag aac tcc atg aac tat	1842
Glu Ser Glu Arg Gly Ile Ile Asn Gly Val Gln Asn Ser Met Asn Tyr	
486 491 496 501	

ctt ctt gat ctt ctg cat ttc atc atg gtc atc ctg gct cca aat cct	1890
Leu Leu Asp Leu Leu His Phe Ile Met Val Ile Leu Ala Pro Asn Pro	
502 507 512 517	

gaa gct ttt ggc ttg ctc gta ttg att tca gtc tcc ttt gtg gca atg	1938
Glu Ala Phe Gly Leu Leu Val Leu Ile Ser Val Ser Phe Val Ala Met	
518 523 528 533	

ggc cac att atg tat ttc cga ttt gcc caa aat act ctg gga aac aag	1986
Gly His Ile Met Tyr Phe Arg Phe Ala Gln Asn Thr Leu Gly Asn Lys	
534 539 544 549	

ctc ttt gct tgc ggt cct gat gca aaa gaa gtt agg aag gaa aat caa	2034
Leu Phe Ala Cys Gly Pro Asp Ala Lys Glu Val Arg Lys Glu Asn Gln	
550 555 560 565	

gca aat aca tct gtt gtt tga ga cagtttaact gttgctatcc tgttactaga	2087
Ala Asn Thr Ser Val Val *	
566 571	

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aaaactcagt ttaaatacgg agactataat gataacactg aattccccta tttctcatga	2327
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gactagctaa tttatttttt tgcactcttag ttatttttaa aaacaaattc ttcaagtatg	2507
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catgtatgtg gaaaaacaaa acacttaact agaattctct aataagggtt atggtttagc	2627
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ttaaagagca cttttgtatt tttattatca gatggggcaa catattgtat gaagcatatg	2687
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agaagccaaa agccacacag aagggcaaga atcccaattt aactcatggt atcatcatta	2867
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agcccacact tgtgaagggt ttgttttaca aatcacttga tttaacacac tcaggtagaa	2987
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tatattttaa aaaattgttt taaaagtcag ttgcaacat gtctgtacca agatgggtact	3167
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ttgccttaac cgtttatatg cactttcatg gagactgcaa tacgttgcta tgagcacttt	3227
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ctttatcctt ggagtttaat cctttgcttc atctttctac agtatgacat aatgatttgc 3287
 tatgttgtaa aatctttgta aaaaatttct atataaaaat attttgaaaa tctcaaaaaa 3347
 aagtcgacgc ggccgcgaat tcggatcctc gagagatctc tttttttggg tttgggtggg 3407
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 Met Ser Glu Asn Ala Ala
 1
 cca ggt ctg atc tca gag ctg aag ctg gct gtg ccc tgg ggc cac atc 161
 Pro Gly Leu Ile Ser Glu Leu Lys Leu Ala Val Pro Trp Gly His Ile
 7 12 17 22
 gca gcc aaa gcc tgg ggc tcc ctg cag ggc cct cca gtt ctc tgc ctg 209
 Ala Ala Lys Ala Trp Gly Ser Leu Gln Gly Pro Pro Val Leu Cys Leu
 23 28 33 38
 cac ggc tgg ctg gac aat gcc aac tcc ttc gac aga ctc atc cct ctt 257
 His Gly Trp Leu Asp Asn Ala Asn Ser Phe Asp Arg Leu Ile Pro Leu
 39 44 49 54
 ctc ccg caa gac ttt tat tac gtt gcc atg gat ttc gga ggt cat ggg 305
 Leu Pro Gln Asp Phe Tyr Tyr Val Ala Met Asp Phe Gly Gly His Gly
 55 60 65 70
 ctc tcg tcc cat tac agc cca ggt gtc cca tat tac ctc cag act ttt 353
 Leu Ser Ser His Tyr Ser Pro Gly Val Pro Tyr Tyr Leu Gln Thr Phe
 71 76 81 86
 gtg agt gag atc cga aga gtt gtg gca ggt aag aaa cag agt gtg tat 401
 Val Ser Glu Ile Arg Arg Val Val Ala Gly Lys Lys Gln Ser Val Tyr
 87 92 97 102
 ttt cgg cgg tgt ggg ggg tgc tct agg gca ccc cct ctt atc act gga 449
 Phe Arg Arg Cys Gly Gly Cys Ser Arg Ala Pro Pro Leu Ile Thr Gly
 103 108 113 118
 ggc ggg gta gga tcc agg aag cag cgc tgg cct gag agt ggg gcc tgg 497

Gly	Gly	Val	Gly	Ser	Arg	Lys	Gln	Arg	Trp	Pro	Glu	Ser	Gly	Ala	Trp	
119					124					129					134	

gct	ctg	gcc	cca	ggg	ctg	cca	gca	att	cac	ggg	aga	tct	tgg	gaa	agt	545
Ala	Leu	Ala	Pro	Gly	Leu	Pro	Ala	Ile	His	Gly	Arg	Ser	Trp	Glu	Ser	
135					140					145					150	

tga	agag	ttc	gttcct	ccagtgggtc	ccccaagcta	gtctcctggg	tggacacccc	602
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151								

agatgctggg	aagggatttc	ctgagcctgg	ggactagaag	caagatcgtg	ggctgagcct	662
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gtgcccagcc	ggaccttctg	gtccttgca	tttccagcct	tgaatggaa	tgcattctcc	722
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ctgggagggg	aggataggag	ctgctgcccc	acccctttcc	cctgcactta	tgagatctgc	842
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aaagagagat	gagaggggtca	gtcagagggt	gaccactgta	ccctctgacc	tcaggcaact	902
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gcccgaaggg	acacagggat	gagggaatg	tgggtctttt	agtggtcagg	tctgatgaag	962
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gggacatcat	ggcccagatg	ctgagcccc	agccacccat	atgggtgccc	ccccccaact	1022
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ggtgggaaga	agctttaggg	tatgcagctg	gggagggagt	gagggaatgt	caccacagc	1082
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tcttttgtcc	cccaggtggc	gtcgtggacg	gaatgggtgag	tagatggctt	tgtctggcca	1142
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atacccgcg	agtaggcgc	cgtccgaccc	cacgtcgag	acagacatcc	tctagatggg	120
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tgtgagaccc	tggccccgc	cccgcggcca	gccccgcca	ccgagccccg	ccctcgccag	180
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gaccaacctc	gcggggattt	tggctgaaaa	tgaaaccggg	taacggctcc	tgggcctctc	240
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ccgggtcaag	ggtctccagg	tcccgtgccc	tcggcggtga	tctcggaccc	agagactcgg	300
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ggagacccgg	gcggtccgtg	gggg	atg	tgg	agg	ggt	agt	gac	ctg	cgc	ccc	351
			Met	Trp	Arg	Gly	Ser	Asp	Leu	Arg	Pro	

1 5

gca aag atg ggg aat gcc cag cgc tgg gcc tcc cca atc cat aca ccg	1071
Ala Lys Met Gly Asn Ala Gln Arg Trp Ala Ser Pro Ile His Thr Pro	
234 239 244 249	
cct ttg ggg cct gag atc ctg aga gcc acg cct gag gcc ctg gga ctt	1119
Pro Leu Gly Pro Glu Ile Leu Arg Ala Thr Pro Glu Ala Leu Gly Leu	
250 255 260 265	
cgc cct gac ccc gct act tct gtg cca agc gct ctg tct caa tgt ttc	1167
Arg Pro Asp Pro Ala Thr Ser Val Pro Ser Ala Leu Ser Gln Cys Phe	
266 271 276 281	
cct gag tct tgg ccc agg agc tgt ctg aga aac cag gga gaa acc ctc	1215
Pro Glu Ser Trp Pro Arg Ser Cys Leu Arg Asn Gln Gly Glu Thr Leu	
282 287 292 297	
gga atg ggc ccc gtc cct ctc tct tca ctt tgc atc acg gaa tcc ccg	1263
Gly Met Gly Pro Val Pro Leu Ser Ser Leu Cys Ile Thr Glu Ser Pro	
298 303 308 313	
tcc cag aac tgg act ccc tgc ctc cta ctc ctt acc tgt ccc cgt gga	1311
Ser Gln Asn Trp Thr Pro Cys Leu Leu Leu Leu Thr Cys Pro Arg Gly	
314 319 324 329	
ctc ttc tag aagaaaa atcacccag ggagcttggt gccagagagt gagcttgccc	1367
Leu Phe *	
330	
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aactacagtg ggtagcagaa tcttggtaac tcctaatagat caggaatcta atcgccaaa	1547
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ttttaggaag tatccacttc taagtgttgt gtatatattta tatgaacact tagtattttt	1907
taaacctgat taacataaaa aaattagttt ttaggcagac ccacataagg tattaaggc	1967
caactgcaaa gatcaccttg caaggctctg tagattgatg tattaataata tataaaacaa	2027
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<210> 170

<211> 2062

<212> DNA
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ctaaataatc gagaaaatgc ctctcttga aacggatata gagatggaaa caagatataa	240
gaaggattga gaatcatata atacaggagc ttaaacacct atgcgcgatg ataaagaggg	300
tactattaga gcgcttgaa aataccagga agttgagaga gttaacagaa gggcgcaagc	360
tggattggcc acaaaatcga attactgaag taagtgcaaa acgacaaatt gtcacagaat	420
acagagaaaa ggggaaaaga aattaagagg agaaaaagag agatctagag ggccggtcca	480
ggagatacaa tctatgcata ataggaatac ctgaaactga ggacagagca agtggagctg	540
aaacaataaa ggatctactt gaaaaaat tccagaattg aagaacgaac tagatctaca	600
aatggaaaag gctcatagga tacctttaa gtttaatgaa aagaaagcag catctagaca	660
tatccgggtg acgtttttga atttcaaaga cgaaacattt tacaagcatc cagtcagaga	720
aagcaggtta cttacaaagg ggcaaaagtc aggctgacct cagatttttc tcttgcaatt	780
ctaa atg cca gaa gac agt gga aca ata tct aga gtg tta agg gaa aat	829
Met Pro Glu Asp Ser Gly Thr Ile Ser Arg Val Leu Arg Glu Asn	
1 5 10	
aat ttt gag cca aga att ata tac tct gcc aag tta tca ttt ctt tac	877
Asn Phe Glu Pro Arg Ile Ile Tyr Ser Ala Lys Leu Ser Phe Leu Tyr	
16 21 26 31	
aaa gga aac tgg aag aca ttc tta gat ata cag ggg tta gga aag tat	925
Lys Gly Asn Trp Lys Thr Phe Leu Asp Ile Gln Gly Leu Gly Lys Tyr	
32 37 42 47	
atc aac caa gaa ctt tcc ctg aaa att ttg ctg aag gat tta ctg cag	973
Ile Asn Gln Glu Leu Ser Leu Lys Ile Leu Leu Lys Asp Leu Leu Gln	
48 53 58 63	
cta aca gag aac ctg aat taa aa taagaatagg gaggcaattg tatgaaagaa	1026
Leu Thr Glu Asn Leu Asn *	
64 69	
ctgatggtat gcattaaaac tagttaagga gcattaagtt taaattgtta tgtatagggc	1086
attaaaacta aatacaaaaa tagaaacata agctgggtgt aaaatttcag tttacgttta	1146

aactggaagg gcataccaca tgttcaatat attggacaaa tactgtttta tttttagcat	1206
gtagtattgt agatacaaat acgcatgttc ttaagctaaa cctaagtaaa agggccttgt	1266
cactgtagat ttgacaaata acattctaaa tgtcaaatct gacaattgga aaacagtaca	1326
gttttatttc ccttattttt aagtatagca ggaaaaaaat aacaagtttg tccatgttac	1386
tactgatact gtaaagaaac ttccaaatca ctggtttggg agggggtgga tacatcctca	1446
ttttctgtac atgatgcatg gggaaaaaca gtagttactg catcatatag ttccaagtaa	1506
atcatatagt tccaagtaaa tttgacatgg aaataagtgt taactacaaa aatagaatat	1566
atacattcca atgtttggaa aagaagtggg aaaaagaaaa atagcaaaaa gacactaaaa	1626
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aattgaaatt ggggtcaaaaa tcaatctcta acctgagata catttgtata aaacaaatga	1746
tcaaagagtt taaagataat ggaaactata aatcatagaa atagcaacat ttttcttaaa	1806
atctaaacat aagacatttt atgtaaaaca tacaatatag gatgtaacat ttaacaaact	1866
atatggtaaa taatatgaca ttaatataaa aaatatatgt tccagatctt gatgtgggtg	1926
atagttttac ttatgtacat cgatatacat ctatttaaaa acatgtacat ttaaattggt	1986
gcattttatg tattttaaaat ttattgagta atccttctgt atgtattatt aaagagaata	2046
tagcaaaaaa aaaaaa	2062

<210> 171
 <211> 2809
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1936)..(2364)

<400> 171	
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ggcctgtgct tccagcgggt ggtggggggc ctggtgtgct ggcacaaagt aagccgacta	120
cctcggcaaa ggcttaggga caagagacca gcagcctgaa ctggctgggg catccggaag	180
gcttagatct tgtggccaag agttcagacc gtggcgaagt ggagagtga atgcagttgg	240
atggcgggtga ctgcgtggtc ctgcaaccct ggttccagtc tggcaagcat ttagacctg	300
gctgctgaag actgacgggg ccaggggtcc gctgccccca ccgccatcac cacctcggaa	360

cccagggtaa cgctgtcagt ctttggacca acctcgctgt gcctaacaag aattccagaa 420
gtcacccatc cgaaaggcac tggcccatga cactctccac ttccaatctt aaatctttta 480
cttcatacct tgtctcagat ctctcctggg accccttccc cagcccctta gataatccat 540
ctcaattcct catgctaatt gaggagctat ggctgcaagg caccttccag gatttcacac 600
ctacacaaat ctcttttttc tctttttgcc ttctctgctt atgggatatt ctgagtcccc 660
acccccaatc actgacagct gggccccctt catcagctc acacaccacg tattaagtca 720
gtcacaatct cccctctcct ctaactgctg gatttgtctt tctacacaca ccaatgatt 780
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aactccctag ccaagactcc ctatcaggcc cttacagggtg ccgctctggc tggcagttac 1560
ccaatttggg aaaacgaaaa taccctatca tggctaccta ccttcaccta caacttctgc 1620
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aactggctcag gaacttgac cctgggtctt caggctccaa ccatcaacat cctacccct 1740
aaccaaacta ttctaatttc tgtagaagcc tctatctcct cttcacccat aagaaataaa 1800
tggtgctctac atctcatcac cctgctaaca ggattaggca tcaactgctgc acttggcact 1860
ggaatagcag gcataaccac ctcaatcacc tcataccaaa cactattcac aaccctttct 1920
aacaccgtag aagat atg cac act tcc att acc agt ctc caa cga caa tta 1971
Met His Thr Ser Ile Thr Ser Leu Gln Arg Gln Leu
1 5 10

gac ttc ctc gtg gga gtc atc ctt caa aac tgg aga gtc ctg gac ctc	2019
Asp Phe Leu Val Gly Val Ile Leu Gln Asn Trp Arg Val Leu Asp Leu	
13 18 23 28	
cta acc act gag aaa ggg ggt acc tgc ata tac ctc cag gaa gaa tgc	2067
Leu Thr Thr Glu Lys Gly Gly Thr Cys Ile Tyr Leu Gln Glu Glu Cys	
29 34 39 44	
tgt ttc tgt gtt aat gaa tct ggc att gtt cat atc gca gtt cgt agg	2115
Cys Phe Cys Val Asn Glu Ser Gly Ile Val His Ile Ala Val Arg Arg	
45 50 55 60	
ctt cat gac agg gct gca gag ctt aga cat caa gtc gct gac tcc tgg	2163
Leu His Asp Arg Ala Ala Glu Leu Arg His Gln Val Ala Asp Ser Trp	
61 66 71 76	
tgg caa gga tca tcc ctt cta aga tgg ata ccc tgg gtt gcc ccc ttc	2211
Trp Gln Gly Ser Ser Leu Leu Arg Trp Ile Pro Trp Val Ala Pro Phe	
77 82 87 92	
cta gga ccc ctg atc ttc ctc ttc ctg tta cta atg att ggg cca tgc	2259
Leu Gly Pro Leu Ile Phe Leu Phe Leu Leu Leu Met Ile Gly Pro Cys	
93 98 103 108	
ata ttt aac ctt gta tcc cgc ttc att tcc caa agg ctg aat tgt ttt	2307
Ile Phe Asn Leu Val Ser Arg Phe Ile Ser Gln Arg Leu Asn Cys Phe	
109 114 119 124	
atc cag gca agc atg caa aaa cac att gat aat ata ttt cac ctt tgc	2355
Ile Gln Ala Ser Met Gln Lys His Ile Asp Asn Ile Phe His Leu Cys	
125 130 135 140	
cac gtc taa taccaga gcctacgagg aaaccattcg gaagctccag aaccaggcc	2411
His Val *	
141	
ctaatacaca cgccctatc cagcaggaag cagccagatg atcaacgacg ccctttttcc	2471
tttttataact aaagtaagaa ataagaatgt tagcccaaac tgcactattt tgcagacccc	2531
taccatttta caaactggtc agagtggaaa attccaccag ggcttgagct gtgagaaaca	2591
tcctgtcagg caggtcccag gcctaacccc tggtgcact aaattccttc attatcagca	2651
gccaaacaca cgcgccccac ccatttttca caacaatccc agacctctcc tgcccgggac	2711
tgtaactggt ccagcctgta agcgggaagg gggctctggc actagctggt accccctctc	2771
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<210> 172
 <211> 1882
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (181)..(1194)

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 aaaaaaagag atctctcgag gatccgaatt cgcggccgcg tcgactttta aaagaataga 120
 tagacgttga attattgata ttctccctct ctctctctag gataacttaca gagagctaca 180
 atg gaa aag tcc tgg atg ctg tgg aac ttt gtt gaa aga tgg cta ata 228
 Met Glu Lys Ser Trp Met Leu Trp Asn Phe Val Glu Arg Trp Leu Ile
 1 5 10 15
 gcc ttg gct tca tgg tct tgg gct ctc tgc cgt att tct ctt tta cct 276
 Ala Leu Ala Ser Trp Ser Trp Ala Leu Cys Arg Ile Ser Leu Leu Pro
 17 22 27 32
 tta ata gtg act ttt cat ctg tat gga ggc att atc tta ctt ttg tta 324
 Leu Ile Val Thr Phe His Leu Tyr Gly Gly Ile Ile Leu Leu Leu Leu
 33 38 43 48
 ata ttc ata tca ata gca ggt att ctg tat aaa ttc cag gat gta ttg 372
 Ile Phe Ile Ser Ile Ala Gly Ile Leu Tyr Lys Phe Gln Asp Val Leu
 49 54 59 64
 ctt tat ttt cca gaa cag cca tcc tct tca cgt ctt tat gtt ccc atg 420
 Leu Tyr Phe Pro Glu Gln Pro Ser Ser Ser Arg Leu Tyr Val Pro Met
 65 70 75 80
 ccc act ggc att cca cat gaa aac att ttc atc aga acc aaa gat gga 468
 Pro Thr Gly Ile Pro His Glu Asn Ile Phe Ile Arg Thr Lys Asp Gly
 81 86 91 96
 ata cgt ctg aat ctt att ttg ata cga tac act gga gac aat tca ccc 516
 Ile Arg Leu Asn Leu Ile Leu Ile Arg Tyr Thr Gly Asp Asn Ser Pro
 97 102 107 112
 tat tcc cca act ata att tat ttt cat ggg aat gca ggc aac ata ggt 564
 Tyr Ser Pro Thr Ile Ile Tyr Phe His Gly Asn Ala Gly Asn Ile Gly
 113 118 123 128
 cac agg ttg cca aat gca tta ctt atg ttg gtt aac ctc aaa gtt aac 612
 His Arg Leu Pro Asn Ala Leu Leu Met Leu Val Asn Leu Lys Val Asn
 129 134 139 144
 ctt ttg ctg gtt gat tat cga gga tat gga aaa agt gaa gga gaa gca 660
 Leu Leu Leu Val Asp Tyr Arg Gly Tyr Gly Lys Ser Glu Gly Glu Ala
 145 150 155 160
 agt gaa gaa gga ctc tac tta gat tct gaa gct gtg tta gac tac gtg 708
 Ser Glu Glu Gly Leu Tyr Leu Asp Ser Glu Ala Val Leu Asp Tyr Val
 161 166 171 176
 atg act agc cct gac ctt gat aaa aca aaa att ttt ctt ttt ggc cgt 756

Met Thr Ser Pro Asp Leu Asp Lys Thr Lys Ile Phe Leu Phe Gly Arg	
177 182 187 192	
tcc ttg ggt gga gca gtg gct att cat ttg gct tct gaa aat tca cat	804
Ser Leu Gly Gly Ala Val Ala Ile His Leu Ala Ser Glu Asn Ser His	
193 198 203 208	
agg att tca gcc att atg gtg gag aac aca ttt tta agc ata cca cat	852
Arg Ile Ser Ala Ile Met Val Glu Asn Thr Phe Leu Ser Ile Pro His	
209 214 219 224	
atg gcc agc act tta ttt tca ttc ttt ccg atg cgt tac ctt cct tta	900
Met Ala Ser Thr Leu Phe Ser Phe Phe Pro Met Arg Tyr Leu Pro Leu	
225 230 235 240	
tgg tgc tac aaa aat aaa ttt ttg tcc tac aga aaa atc tct cag tgt	948
Trp Cys Tyr Lys Asn Lys Phe Leu Ser Tyr Arg Lys Ile Ser Gln Cys	
241 246 251 256	
aga atg cct tca ctt ttc atc tct gga ctc tca gat caa tta att cca	996
Arg Met Pro Ser Leu Phe Ile Ser Gly Leu Ser Asp Gln Leu Ile Pro	
257 262 267 272	
cca gta atg atg aaa caa ctt tat gaa ctc tcc cca tct cgg act aag	1044
Pro Val Met Met Lys Gln Leu Tyr Glu Leu Ser Pro Ser Arg Thr Lys	
273 278 283 288	
aga tta gcc att ttt cca gat ggg act cac aat gac aca tgg cag tgc	1092
Arg Leu Ala Ile Phe Pro Asp Gly Thr His Asn Asp Thr Trp Gln Cys	
289 294 299 304	
caa ggc tat ttc act gca ctt gaa cag ttc atc aaa gaa gtc gta aag	1140
Gln Gly Tyr Phe Thr Ala Leu Glu Gln Phe Ile Lys Glu Val Val Lys	
305 310 315 320	
agc cat tct cct gaa gaa atg gca aaa act tca tct aat gta aca att	1188
Ser His Ser Pro Glu Glu Met Ala Lys Thr Ser Ser Asn Val Thr Ile	
321 326 331 336	
ata taa tgtttccctt tttgattatt gcattgtatt ttaatttgtg cagaatgata	1244
Ile *	
337	
aagaatgttc cttttagaag tgtgttatgt ctgtacctgt ctgaagagtg acattaaact	1304
ttgaaaggac ttcactgctc ctttaogata ttccaaatag ttttttacat tggaaaaact	1364
aattcttggg attctttcat acattttcat caaaactttc agtgtgatta tgtattcata	1424
tcttcagttt aatatgtcag tataatagat attgttcaaa agtttcttgt tgctaaagtg	1484
gtgtaatctg ttacacagat gaatagctag atgtggaaag agatatgtaa acaagaaacc	1544
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aactgcattt ttcaccttaa aagttaaag aaatgcata tggtatttta ttccttgaat	1664

tatgcaatgc aacatttttac atgtaaatag cactgggtcat atactgatgt atatggttat 1724
ctgggttata tctatttttta tgtaaactct attttgtttt tggcaagaag tgaaattgag 1784
acttatgtgc aggttgccat tgaattttgc tctgggtgaat gctgagatcc agctttttct 1844
tacaaataaa tgggaccctg ttttccaaaa aaaaaaaaa 1882

<210> 173
<211> 1713
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (170)..(1153)

<400> 173

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ttaggtgaca ctatagaagg tacgcctgca ggtaccggtc cggaattccc gggtcgaccc 120
acgcgtccgc ggacgcgtgg gaggggtttt aagtgtagtt gccgacgca atg gca 175
Met Ala
1
gcc ttt gca gtg gaa cct cag ggg ccc gcg tta gga tct gaa cca atg 223
Ala Phe Ala Val Glu Pro Gln Gly Pro Ala Leu Gly Ser Glu Pro Met
3 8 13 18
atg ctg ggt tca ccc aca tct cca aag cca gga gtt aat gcc cag ttc 271
Met Leu Gly Ser Pro Thr Ser Pro Lys Pro Gly Val Asn Ala Gln Phe
19 24 29 34
tta cct gga ttt tta atg ggg gat ttg cca gct ccg gtg act cca caa 319
Leu Pro Gly Phe Leu Met Gly Asp Leu Pro Ala Pro Val Thr Pro Gln
35 40 45 50
cct cga tca att agt ggc cct tca gta gga gta atg gaa atg aga tca 367
Pro Arg Ser Ile Ser Gly Pro Ser Val Gly Val Met Glu Met Arg Ser
51 56 61 66
cct tta ctt gca ggt ggg tca cca cca caa cca gtt gta cca gct cat 415
Pro Leu Leu Ala Gly Gly Ser Pro Pro Gln Pro Val Val Pro Ala His
67 72 77 82
aaa gat aaa agt ggc gct cca cca gtt aga agt ata tat gat gac att 463
Lys Asp Lys Ser Gly Ala Pro Pro Val Arg Ser Ile Tyr Asp Asp Ile
83 88 93 98
tct agc cca gga ctt gga tca aca cct tta act tca aga aga cag cca 511
Ser Ser Pro Gly Leu Gly Ser Thr Pro Leu Thr Ser Arg Arg Gln Pro
99 104 109 114

aac att tca gta atg cag agt cct ctt gtt gga gtt aca tct act cct	559
Asn Ile Ser Val Met Gln Ser Pro Leu Val Gly Val Thr Ser Thr Pro	
115 120 125 130	
gga aca ggg caa agt atg ttt agt cca gca agt atc ggt cag cca cga	607
Gly Thr Gly Gln Ser Met Phe Ser Pro Ala Ser Ile Gly Gln Pro Arg	
131 136 141 146	
aag acg aca tta tct cct gcc cag ttg gat cct ttt tat act caa gga	655
Lys Thr Thr Leu Ser Pro Ala Gln Leu Asp Pro Phe Tyr Thr Gln Gly	
147 152 157 162	
gat tct ttg act tca gaa gat cac ctc gat gac tct tgg gtg act gta	703
Asp Ser Leu Thr Ser Glu Asp His Leu Asp Asp Ser Trp Val Thr Val	
163 168 173 178	
ttt ggg ttt cct caa gca tct gct tcc tac ata tta cta caa ttt gca	751
Phe Gly Phe Pro Gln Ala Ser Ala Ser Tyr Ile Leu Leu Gln Phe Ala	
179 184 189 194	
cag tat ggg gga ata tct tat aac atg tgg atg tct aat aca gga aat	799
Gln Tyr Gly Gly Ile Ser Tyr Asn Met Trp Met Ser Asn Thr Gly Asn	
195 200 205 210	
tgg atg cat att cgt tat caa tct aaa ctg cag gct cgg aaa gcc tta	847
Trp Met His Ile Arg Tyr Gln Ser Lys Leu Gln Ala Arg Lys Ala Leu	
211 216 221 226	
agc aaa gat ggg agg att ttt gga gaa tcc atc atg att ggt gta aaa	895
Ser Lys Asp Gly Arg Ile Phe Gly Glu Ser Ile Met Ile Gly Val Lys	
227 232 237 242	
cca tgt att gac aaa agt gtt atg gaa agc agt gac aga tgt gct tta	943
Pro Cys Ile Asp Lys Ser Val Met Glu Ser Ser Asp Arg Cys Ala Leu	
243 248 253 258	
tca tct cca tct tta gcc ttt aca cca cca atc aaa act cta ggt aca	991
Ser Ser Pro Ser Leu Ala Phe Thr Pro Pro Ile Lys Thr Leu Gly Thr	
259 264 269 274	
cca aca caa cct gga agt act cct agg att tct acc atg aga cct ctt	1039
Pro Thr Gln Pro Gly Ser Thr Pro Arg Ile Ser Thr Met Arg Pro Leu	
275 280 285 290	
gct aca gca tac aaa gcc tct act agt gat tat cag gtt att tct gac	1087
Ala Thr Ala Tyr Lys Ala Ser Thr Ser Asp Tyr Gln Val Ile Ser Asp	
291 296 301 306	
aga caa acg cca aaa aaa gat gaa agt ctt gta tcc aaa gca atg gag	1135
Arg Gln Thr Pro Lys Lys Asp Glu Ser Leu Val Ser Lys Ala Met Glu	
307 312 317 322	
tac atg ttt ggc tgg tag tagaac accaagaagg aggttgctac actaaaacag	1189
Tyr Met Phe Gly Trp *	
323 328	
agttagcaga gtgctgctgg ttccttcggt tagttatata actgttcctg cagtattgga	1249

tagctatctc atacttcttt tagaaagaag cttttttcat taaggatata acctatttgt 1309
 agctcgcaact ttaaaagatg cttgagatac attttaaaga aaactaaaaa tccctgtaaa 1369
 taggattttg tgctttctgt aacagtgcac gcttcagcac agaaaactca gcattgatta 1429
 ttgtaaatta aataactgaa attgtggtga gacgtcatag tcttcatgag aacgtggggg 1489
 tgaatttcat gaaggggaac tatagttatt tctaccgaca caaatattat aattagcaat 1549
 ttgaattatg gtcttttaat ttagatagta tttaatat tttaattatcct tgtttgata 1609
 tgtcctgtca cagagtgtcc tcttggtgta ttctaaaacg agcattcttt taaaaaacct 1669
 aaagtttctt gataataaac attgtcaatg ataaaaaaaa aaaa 1713

<210> 174
 <211> 4069
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (771)..(2894)

<220>
 <221> misc_feature
 <222> (1)...(4069)
 <223> n = a,t,c or g

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 cctgtttttc gcggttttta atcaggcacc cactatgagg ggaaattttg ccctcggagg 120
 cccaagaatt ggggcaggag ggtttttttt aaaatagtgc ccagtccaag tgggaaatgg 180
 agaatgaaac aaataaatct gtaaactggt tgtgatcaat tagttgtaaa caccgccgca 240
 ctgagaccag ccatgggttt gccctttgat aaggggcaaag acacattttt cgtggtatca 300
 gggaaaaaga tttaaaaaga caaggcaaat ttaagtaggc tcatggcttt tccagttggg 360
 ttggaaagtt cctctccgat gactgttata ttctcaaaga aatatgagga gaggggcagg 420
 gcatggtggc tcacatccgt aatcctagca aatcatatgt gcctacagcc aacgccttct 480
 tcgctcactg gccaaactgga aacttcagtc ccccatgcc tccgcctct caccagggg 540
 ccaataggaa tgatcagagg ttcgcaactt agtgtcatca agcatagtaa ttgcaattgg 600
 ctattggagc tgtcgatcgt gaagtatgcg gggccgtcca gcttgcctat ataagacgag 660

gacannacgc cgccgcctgt gtcacccgcc attttgtgag aagcaagggtg gcctccacgt	720
ttcttgagcg tctttcttcgc ttttgctcgc accgcccctt gaccacagac atg tct Met Ser 1	776
cggtgat cgg ttc cgg agt cgt ggc ggt ggc ggt ggt ggc ttc cac agg Arg Asp Arg Phe Arg Ser Arg Gly Gly Gly Gly Gly Gly Phe His Arg 3 8 13 18	824
cgt gga gga ggc ggc ggc cgc ggc ggc ctc cac gac ttc cgt tct ccg Arg Gly Gly Gly Gly Gly Arg Gly Gly Leu His Asp Phe Arg Ser Pro 19 24 29 34	872
ccg ccc ggc atg ggc ctc aat cag aat cgc ggc ccc atg ggt cct ggc Pro Pro Gly Met Gly Leu Asn Gln Asn Arg Gly Pro Met Gly Pro Gly 35 40 45 50	920
ccg ggc cag agc ggc cct aag cct ccg atc ccg cca ccg cct cca cac Pro Gly Gln Ser Gly Pro Lys Pro Pro Ile Pro Pro Pro Pro Pro His 51 56 61 66	968
caa cag cag caa cag cca cca ccg cag cag cca ccg ccg cag cag ccg Gln Gln Gln Gln Gln Pro Pro Pro Gln Gln Pro Pro Pro Gln Gln Pro 67 72 77 82	1016
cca ccg cat cag ccg ccg ccg cat cca cag ccg cat cag cag cag cag Pro Pro His Gln Pro Pro Pro His Pro Gln Pro His Gln Gln Gln Gln 83 88 93 98	1064
ccg ccg cca ccg ccg cag gac tct tcc aag ccc gtc gtt gct cag gga Pro Pro Pro Pro Pro Gln Asp Ser Ser Lys Pro Val Val Ala Gln Gly 99 104 109 114	1112
ccc ggc ccc gct ccc gga gta ggc agc gca cca cca gcc tcc agc tcg Pro Gly Pro Ala Pro Gly Val Gly Ser Ala Pro Pro Ala Ser Ser Ser 115 120 125 130	1160
gcc ccg ccc gcc act cca cca acc tcg ggg gcc ccg cca ggg tcc ggg Ala Pro Pro Ala Thr Pro Pro Thr Ser Gly Ala Pro Pro Gly Ser Gly 131 136 141 146	1208
cca ggc ccg act ccg acc ccg ccg cct gca gtc acc tcg gcc cct ccc Pro Gly Pro Thr Pro Thr Pro Pro Pro Ala Val Thr Ser Ala Pro Pro 147 152 157 162	1256
ggg gcg ccg cca ccc acc ccg cca agc agc ggg gtc cct acc aca cct Gly Ala Pro Pro Pro Thr Pro Pro Ser Ser Gly Val Pro Thr Thr Pro 163 168 173 178	1304
cct cag gcc gga ggc ccg ccg cct ccg ccc gcg gca gtc ccg ggc ccg Pro Gln Ala Gly Gly Pro Pro Pro Pro Pro Ala Ala Val Pro Gly Pro 179 184 189 194	1352
ggt cca ggg cct aag cag ggc cca ggt ccg ggt ggt ccc aaa ggc ggc Gly Pro Gly Pro Lys Gln Gly Pro Gly Pro Gly Gly Pro Lys Gly Gly 195 200 205 210	1400

aaa atg cct ggc ggg ccg aag cca ggt ggc ggc ccg ggc cta agt acg	1448
Lys Met Pro Gly Gly Pro Lys Pro Gly Gly Gly Pro Gly Leu Ser Thr	
211 216 221 226	
cct ggc ggc cac ccc aag ccg ccg cat cga ggc ggc ggg gag ccc cgc	1496
Pro Gly Gly His Pro Lys Pro Pro His Arg Gly Gly Gly Glu Pro Arg	
227 232 237 242	
ggg ggc cgc cag cac cac ccg ccc tac cac cag cag cat cac cag ggg	1544
Gly Gly Arg Gln His His Pro Pro Tyr His Gln Gln His His Gln Gly	
243 248 253 258	
ccc ccg ccc ggc ggg ccc ggc ggc cgc agc gag gag aag atc tcg gac	1592
Pro Pro Pro Gly Gly Pro Gly Gly Arg Ser Glu Glu Lys Ile Ser Asp	
259 264 269 274	
tcg gag ggg ttt aaa gcc aat ttg tct ctc ttg agg agg cct gga gag	1640
Ser Glu Gly Phe Lys Ala Asn Leu Ser Leu Leu Arg Arg Pro Gly Glu	
275 280 285 290	
aaa act tac aca cag cga tgt ccg ttg ttt gtt ggg aat cta cct gct	1688
Lys Thr Tyr Thr Gln Arg Cys Arg Leu Phe Val Gly Asn Leu Pro Ala	
291 296 301 306	
gat atc acg gag gat gaa ttc aaa aga cta ttt gct aaa tat gga gaa	1736
Asp Ile Thr Glu Asp Glu Phe Lys Arg Leu Phe Ala Lys Tyr Gly Glu	
307 312 317 322	
cca gga gaa gtt ttt atc aac aaa ggc aaa gga ttc gga ttt att aag	1784
Pro Gly Glu Val Phe Ile Asn Lys Gly Lys Gly Phe Gly Phe Ile Lys	
323 328 333 338	
ctt gaa tct aga gct ttg gct gaa att gcc aaa gcc gaa ctg gat gat	1832
Leu Glu Ser Arg Ala Leu Ala Glu Ile Ala Lys Ala Glu Leu Asp Asp	
339 344 349 354	
aca ccc atg aga ggt aga cag ctt cga gtt cgc ttt gcc aca cat gct	1880
Thr Pro Met Arg Gly Arg Gln Leu Arg Val Arg Phe Ala Thr His Ala	
355 360 365 370	
gct gcc ctt tct gtt cgt aat ctt tca cct tat gtt tcc aat gaa ctg	1928
Ala Ala Leu Ser Val Arg Asn Leu Ser Pro Tyr Val Ser Asn Glu Leu	
371 376 381 386	
ttg gaa gaa gcc ttt agc caa ttt ggt cct att gaa agg gct gtt gta	1976
Leu Glu Glu Ala Phe Ser Gln Phe Gly Pro Ile Glu Arg Ala Val Val	
387 392 397 402	
ata gtg gat gat cgt gga aga tct aca ggg aaa ggc att gtt gaa ttt	2024
Ile Val Asp Asp Arg Gly Arg Ser Thr Gly Lys Gly Ile Val Glu Phe	
403 408 413 418	
gct tct aag cca gca gca aga aag gca ttt gaa cga tgc agt gaa ggt	2072
Ala Ser Lys Pro Ala Ala Arg Lys Ala Phe Glu Arg Cys Ser Glu Gly	
419 424 429 434	

gtt ttc tta ctg acg aca act cct cgt cca gtc att gtg gaa cca ctt	2120
Val Phe Leu Leu Thr Thr Thr Pro Arg Pro Val Ile Val Glu Pro Leu	
435 440 445 450	
gaa caa cta gat gat gaa gat ggt ctt cct gaa aaa ctt gcc cag aag	2168
Glu Gln Leu Asp Asp Glu Asp Gly Leu Pro Glu Lys Leu Ala Gln Lys	
451 456 461 466	
aat cca atg tat caa aag gag aga gaa acc cct cct cgt ttt gcc cag	2216
Asn Pro Met Tyr Gln Lys Glu Arg Glu Thr Pro Pro Arg Phe Ala Gln	
467 472 477 482	
cat ggc acg ttt gag tac gaa tat tct cag cga tgg aag tct ttg gat	2264
His Gly Thr Phe Glu Tyr Glu Tyr Ser Gln Arg Trp Lys Ser Leu Asp	
483 488 493 498	
gaa atg gaa aaa cag caa agg gaa caa gtt gaa aaa aac atg aaa gat	2312
Glu Met Glu Lys Gln Gln Arg Glu Gln Val Glu Lys Asn Met Lys Asp	
499 504 509 514	
gca aaa gac aaa ttg gaa agt gaa atg gaa gat gcc tat cat gaa cat	2360
Ala Lys Asp Lys Leu Glu Ser Glu Met Glu Asp Ala Tyr His Glu His	
515 520 525 530	
cag gca aat ctt ttg cgc caa gat ctg atg aga cga cag gaa gaa tta	2408
Gln Ala Asn Leu Leu Arg Gln Asp Leu Met Arg Arg Gln Glu Glu Leu	
531 536 541 546	
aga cgc atg gaa gaa ctt cac aat caa gaa atg cag aaa cgt aaa gaa	2456
Arg Arg Met Glu Glu Leu His Asn Gln Glu Met Gln Lys Arg Lys Glu	
547 552 557 562	
atg caa ttg agg caa gag gag gaa cga cgt aga aga gag gaa gag atg	2504
Met Gln Leu Arg Gln Glu Glu Glu Arg Arg Arg Arg Glu Glu Glu Met	
563 568 573 578	
atg att cgt caa cgt gag atg gaa gaa caa atg agg cgc caa aga gag	2552
Met Ile Arg Gln Arg Glu Met Glu Glu Gln Met Arg Arg Gln Arg Glu	
579 584 589 594	
gaa agt tac agc cga atg ggc tac atg gat cca cgg gaa aga gac atg	2600
Glu Ser Tyr Ser Arg Met Gly Tyr Met Asp Pro Arg Glu Arg Asp Met	
595 600 605 610	
cga atg ggt ggc gga gga gca atg aac atg gga gat ccc tat ggt tca	2648
Arg Met Gly Gly Gly Gly Ala Met Asn Met Gly Asp Pro Tyr Gly Ser	
611 616 621 626	
gga ggc cag aaa ttt cca cct cta gga ggt ggt ggt ggc ata ggt tat	2696
Gly Gly Gln Lys Phe Pro Pro Leu Gly Gly Gly Gly Gly Ile Gly Tyr	
627 632 637 642	
gaa gct aat cct ggc gtt cca cca gca acc atg agt ggt tcc atg atg	2744
Glu Ala Asn Pro Gly Val Pro Pro Ala Thr Met Ser Gly Ser Met Met	
643 648 653 658	
gga agt gac atg cgt act gag cgc ttt ggg cag gga ggt gcg ggg cct	2792

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 <213> Homo sapiens

<220>
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<400> 175

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ccactagtcc agtgtggtgg aattcagaac acctcatgaa ata atg aga aga gaa 115
 Met Arg Arg Glu
 1

agc aac aga tta tct gca cct tct tat ctt gcc aga agt cta gca gat 163
 Ser Asn Arg Leu Ser Ala Pro Ser Tyr Leu Ala Arg Ser Leu Ala Asp
 5 10 15 20

gtc cct aga gag tat ggt tct tct cag tca ttt gta acg gaa gtt agt 211
 Val Pro Arg Glu Tyr Gly Ser Ser Gln Ser Phe Val Thr Glu Val Ser
 21 26 31 36

ttt gct gtt gaa aat gga gac tct ggt tcc cga tat tat tat tca gac 259
 Phe Ala Val Glu Asn Gly Asp Ser Gly Ser Arg Tyr Tyr Tyr Ser Asp
 37 42 47 52

aat ttt ttt gat ggt cag aga aag cgg cca ctt gga gat cgt gca cat 307
 Asn Phe Phe Asp Gly Gln Arg Lys Arg Pro Leu Gly Asp Arg Ala His
 53 58 63 68

gaa gac tac aga tat tat gaa tac aac cat gat ctc ttc caa aga atg 355
 Glu Asp Tyr Arg Tyr Tyr Glu Tyr Asn His Asp Leu Phe Gln Arg Met
 69 74 79 84

cca cag aat cag ggg agg cat gct tca ggt att ggg aga gtt gct gct 403
 Pro Gln Asn Gln Gly Arg His Ala Ser Gly Ile Gly Arg Val Ala Ala
 85 90 95 100

aca tct tta gga aat ttg act aac cat ggt tct gaa gat tta ccc ctt 451
 Thr Ser Leu Gly Asn Leu Thr Asn His Gly Ser Glu Asp Leu Pro Leu
 101 106 111 116

cct cct ggc tgg tct gtg gac tgg aca atg aga ggg aga aaa tat tat 499
 Pro Pro Gly Trp Ser Val Asp Trp Thr Met Arg Gly Arg Lys Tyr Tyr
 117 122 127 132

ata gat cat aac aca aat aca act cac tgg agc cat cct ctt gag cga 547
 Ile Asp His Asn Thr Asn Thr Thr His Trp Ser His Pro Leu Glu Arg
 133 138 143 148

gaa gga ctt cct cct gga tgg gaa cga gtt gag tca tcc gaa ttt gga 595
 Glu Gly Leu Pro Pro Gly Trp Glu Arg Val Glu Ser Ser Glu Phe Gly
 149 154 159 164

acc tat tat gta gat cac aca aat aag aag gcc caa tac agg cat ccc 643
 Thr Tyr Tyr Val Asp His Thr Asn Lys Lys Ala Gln Tyr Arg His Pro

165	170	175	180	
tgt gct cct agt gta	cct cgg tat gat	caa cca cct cct gtc	aca tac	691
Cys Ala Pro Ser Val	Pro Arg Tyr Asp	Gln Pro Pro Pro Val	Thr Tyr	
181	186	191	196	
cag cca cag caa act	gaa aga aat cag	tcc ctt ctg gta	cct gca aat	739
Gln Pro Gln Gln Thr	Glu Arg Asn Gln	Ser Leu Leu Val	Pro Ala Asn	
197	202	207	212	
cca tat cat act gca	gaa att cct gac	tgg ctt cag gtt	tac gca cga	787
Pro Tyr His Thr Ala	Glu Ile Pro Asp	Trp Leu Gln Val	Tyr Ala Arg	
213	218	223	228	
gcc cct gtg aaa tat	gac cac att ctg	aag tgg gaa ctc	ttc cag ctg	835
Ala Pro Val Lys Tyr	Asp His Ile Leu	Lys Trp Glu Leu	Phe Gln Leu	
229	234	239	244	
gct gac ctg gat aca	tac cag gga atg	cta aag ttg ctc	ttc atg aaa	883
Ala Asp Leu Asp Thr	Tyr Gln Gly Met	Leu Lys Leu Leu	Phe Met Lys	
245	250	255	260	
gaa ttg gag cag att	gtt aaa atg tat	gaa gca tac aga	caa gcc ctt	931
Glu Leu Glu Gln Ile	Val Lys Met Tyr	Glu Ala Tyr Arg	Gln Ala Leu	
261	266	271	276	
ctt aca gag ttg gaa	aac cga aag cag	aga cag cag tgg	tat gcc caa	979
Leu Thr Glu Leu Glu	Asn Arg Lys Gln	Arg Gln Gln Trp	Tyr Ala Gln	
277	282	287	292	
caa cat gga aaa aat	ttt tga gc tgatttttta	aaaatttaag ttttgaaga		1032
Gln His Gly Lys Asn	Phe *			
293	298			
gctttaaaat attttcacag	ataaaaaaatt gcaaacaagt	actctgggta ataaatgctg		1092
cttcctttgt ggaaattata	aaattctaac tttacatgta	ttttgttatt agaaattttc		1152
ttttattgga tgagaaaaat	tagtctatca ttttaagagc	caatatggca aacactttca		1212
aatactgtat attaggaaac	tgttttggta ttcttgatgg	aaaaaaatgc agcggaaatg		1272
tcattatgaa cagatgttaa	ataggaaatt attacttggt	aacttcttac agcagtagta		1332
ccttctttta aaaaaaaaaa	gaatctgcgg tattttttta	aaaaaaaaagt ttactgctgt		1392
agtgtgaaat attgtctgga	aagggatggt ttaaatatcc	ccatgatgta gttgaaatat		1452
aaaataggat ttggaacctt	attgtgataa atatttatat	atgatgtatg tttgtctccc		1512
ctctccaaag taaggaaccc	agctgggctg ggtggctcac	tcctgtaatc ccagcatttt		1572
gggaggccga ggtgggtgga	ccgcttgagt ccacgagttt	aagaccagcc tgggcaacat		1632
ggtgaagccc tacaaaaaat	acaaaaaaat tagccgggta	tgatggtgtg tgcctctagt		1692
cccagctact tgggaggctg	aggtcagagg atggcttgag	cccaagaggc agaggttgca		1752

gggtcaagat cgcaccactt gcactgcagc ctgagagaga gagagccaga ccttgtctca 1812
 aaaaataaaa aaaaaaaa 1830

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 <212> DNA
 <213> Homo sapiens

<220>
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tgt cct gga ggc ggc aaa gca caa ctt tcc tcc gct tct ctc ctc gga	96
Cys Pro Gly Gly Gly Lys Ala Gln Leu Ser Ser Ala Ser Leu Leu Gly	
17 22 27 32	
gcc ggg ctc ctg ctg cag ccc ccg acg cca cct ccg ctg ctg ctg ctg	144
Ala Gly Leu Leu Leu Gln Pro Pro Thr Pro Pro Pro Leu Leu Leu Leu	
33 38 43 48	
ctc ttc ccg ctg ctg ctc ttc tcc agg ctc tgt ggt gcc tta gct gga	192
Leu Phe Pro Leu Leu Leu Phe Ser Arg Leu Cys Gly Ala Leu Ala Gly	
49 54 59 64	
cca att att gtg gag cca cat gtc aca gca gta tgg gga aag aat gtt	240
Pro Ile Ile Val Glu Pro His Val Thr Ala Val Trp Gly Lys Asn Val	
65 70 75 80	
tca tta aag tgt tta att gaa gta aat gaa acc ata aca cag att tca	288
Ser Leu Lys Cys Leu Ile Glu Val Asn Glu Thr Ile Thr Gln Ile Ser	
81 86 91 96	
tgg gag aag ata cat ggc aaa agt tca cag act gtt gca gtt cac cat	336
Trp Glu Lys Ile His Gly Lys Ser Ser Gln Thr Val Ala Val His His	
97 102 107 112	
ccc caa tat gga ttc tct gtt caa gga gaa tat cag gga aga gtc ttg	384
Pro Gln Tyr Gly Phe Ser Val Gln Gly Glu Tyr Gln Gly Arg Val Leu	
113 118 123 128	
ttt aaa aat tac tca ctt aat gat gca aca att act ctg cat aac ata	432
Phe Lys Asn Tyr Ser Leu Asn Asp Ala Thr Ile Thr Leu His Asn Ile	
129 134 139 144	
gga ttc tct gat tct gga aaa tac atc tgc aaa gct gtt aca ttc ccg	480
Gly Phe Ser Asp Ser Gly Lys Tyr Ile Cys Lys Ala Val Thr Phe Pro	
145 150 155 160	

ctt gga aat gcc cag tcc tct aca act gta act gtg tta gtt gaa ccc	528
Leu Gly Asn Ala Gln Ser Ser Thr Thr Val Thr Val Leu Val Glu Pro	
161 166 171 176	
act gtg agc ctg ata aaa ggg cca gat tct tta att gat gga gga aat	576
Thr Val Ser Leu Ile Lys Gly Pro Asp Ser Leu Ile Asp Gly Gly Asn	
177 182 187 192	
gaa aca gta gca gcc att tgc atc gca gcc act gga aaa ccc gtt gca	624
Glu Thr Val Ala Ala Ile Cys Ile Ala Ala Thr Gly Lys Pro Val Ala	
193 198 203 208	
cat att gac tgg gaa ggt gat ctt ggt gaa atg gaa tcc act aca act	672
His Ile Asp Trp Glu Gly Asp Leu Gly Glu Met Glu Ser Thr Thr Thr	
209 214 219 224	
tct ttt cca aat gaa acg gca acg att atc agc cag tac aag cta ttt	720
Ser Phe Pro Asn Glu Thr Ala Thr Ile Ile Ser Gln Tyr Lys Leu Phe	
225 230 235 240	
cca acc aga ttt gct aga gga agg cga att act tgt gtt gta aaa cat	768
Pro Thr Arg Phe Ala Arg Gly Arg Arg Ile Thr Cys Val Val Lys His	
241 246 251 256	
cca gcc ttg gaa aag gac atc cga tac tct ttc ata tta gac ata cag	816
Pro Ala Leu Glu Lys Asp Ile Arg Tyr Ser Phe Ile Leu Asp Ile Gln	
257 262 267 272	
tat gct cct gaa gtt tgc gta aca gga tat gat gga aat tgg ttt gta	864
Tyr Ala Pro Glu Val Ser Val Thr Gly Tyr Asp Gly Asn Trp Phe Val	
273 278 283 288	
gga aga aaa ggt gtt aat ctc aaa tgt aat gct gat gca aat cca cca	912
Gly Arg Lys Gly Val Asn Leu Lys Cys Asn Ala Asp Ala Asn Pro Pro	
289 294 299 304	
ccc ttc aaa tct gtg tgg agc agg ttg gat gga caa tgg cct gat ggt	960
Pro Phe Lys Ser Val Trp Ser Arg Leu Asp Gly Gln Trp Pro Asp Gly	
305 310 315 320	
tta ttg gct tca gac aat act ctt cat ttt gtc cat cca ttg act ttc	1008
Leu Leu Ala Ser Asp Asn Thr Leu His Phe Val His Pro Leu Thr Phe	
321 326 331 336	
aat tat tct ggt gtt tat atc tgt aaa gtg acc aat tcc ctt ggt caa	1056
Asn Tyr Ser Gly Val Tyr Ile Cys Lys Val Thr Asn Ser Leu Gly Gln	
337 342 347 352	
aga agt gac caa aaa gtc atc tac att tca gat cct cct act act acc	1104
Arg Ser Asp Gln Lys Val Ile Tyr Ile Ser Asp Pro Pro Thr Thr Thr	
353 358 363 368	
acc ctt cag cct aca att cag tgg cat ccc tca act gct gac atc gag	1152
Thr Leu Gln Pro Thr Ile Gln Trp His Pro Ser Thr Ala Asp Ile Glu	
369 374 379 384	

gat cta gca aca gaa cct aaa aaa ttg ccc ttc cca ttg tca act ttg	1200
Asp Leu Ala Thr Glu Pro Lys Lys Leu Pro Phe Pro Leu Ser Thr Leu	
385 390 395 400	
gca aca att aag gat gac aca att gcc acg atc att gct agt gta gtg	1248
Ala Thr Ile Lys Asp Asp Thr Ile Ala Thr Ile Ile Ala Ser Val Val	
401 406 411 416	
ggg ggt gct ctc ttc ata gta ctt gta agt gtt ttg gct gga ata ttc	1296
Gly Gly Ala Leu Phe Ile Val Leu Val Ser Val Leu Ala Gly Ile Phe	
417 422 427 432	
tgc tat agg aga aga cgg acg ttt cgt gga gac tac ttt gcc aag aac	1344
Cys Tyr Arg Arg Arg Arg Thr Phe Arg Gly Asp Tyr Phe Ala Lys Asn	
433 438 443 448	
tac att cca cca tca gat atg caa aaa gaa tca caa ata gat gtt ctt	1392
Tyr Ile Pro Pro Ser Asp Met Gln Lys Glu Ser Gln Ile Asp Val Leu	
449 454 459 464	
caa caa gat gag ctt gat tct tac cca gac agt gta aaa aaa gaa aaa	1440
Gln Gln Asp Glu Leu Asp Ser Tyr Pro Asp Ser Val Lys Lys Glu Lys	
465 470 475 480	
aaa aat cca gtg aac aat cta ata cgt aaa gac tat tta gaa gag cct	1488
Lys Asn Pro Val Asn Asn Leu Ile Arg Lys Asp Tyr Leu Glu Glu Pro	
481 486 491 496	
gaa aaa act cag tgg aac aat gta gaa aat ctc aat agg ttt gaa aga	1536
Glu Lys Thr Gln Trp Asn Asn Val Glu Asn Leu Asn Arg Phe Glu Arg	
497 502 507 512	
cca atg gat tat tat gaa gat cta aaa atg gga atg aag ttt gtc agt	1584
Pro Met Asp Tyr Tyr Glu Asp Leu Lys Met Gly Met Lys Phe Val Ser	
513 518 523 528	
gat gaa cat tat gat gaa aac gaa gat gac tta gtt tca cat gta gat	1632
Asp Glu His Tyr Asp Glu Asn Glu Asp Asp Leu Val Ser His Val Asp	
529 534 539 544	
ggg tcc gta att tcc agg agg gag tgg tat gtt tag caac cactgaatgt	1682
Gly Ser Val Ile Ser Arg Arg Glu Trp Tyr Val *	
545 550 555	
gacttaacta tgtacaatgt tcattcacac tagttgatca ttttcagatt gttcatactt	1742
tttcttgagg aagaataagc tttttcaagt tgattttcaa gcttactttt tatattctaa	1802
tctgacaaat gaaaatgtaa aatctgagtt cagtgtatct aagctgcttt acaatttttt	1862
ttcaatgctg tactactgtc tcaagattta aattttaatg cagagtaactt tattggtgtg	1922
aggcacacag gtaagaagaa atgtcaacat taaatgtatg acttacttgg tacaaaaatt	1982
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aagtatgatg ttgttttaac atatacctct caaaatttat caccactcaa tgacactgca	2102

tcaaaattga ctataaaact aattcaagaa atattttatat atattttttta atatacaaaaa	2162
aatattttagc ctgatggaat ggcttttcctt ttcaaacatt atttttctaag tttctataca	2222
aatgaaatct ttacctctgc atattaatga gccttgccat aattactgta gagtggcttt	2282
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tgtaaattag tgcgatgagt aggggaagg agcctactag ggtgtagaat aggaagtatg	180
tgctgcgtt caggcgttct ggctgggtgc ctcatcgggt gatgatagcc aagggtggga	240
taagtgtggt tgcgaagtgg gctcgtgggt tggcagt atg aga gtt gta atg gcc	295
Met Arg Val Val Met Ala	
1	

cga ctg ttg agt gag ggg gag cag ggg atc cca acg gct tgc gct gcc	343
Arg Leu Leu Ser Glu Gly Glu Gln Gly Ile Pro Thr Ala Cys Ala Ala	
7 12 17 22	

ttt gcg cag cag ccg gcg ggc gag cca cgt cgc ggc ctg gct ggg gta	391
Phe Ala Gln Gln Pro Ala Gly Glu Pro Arg Arg Gly Leu Ala Gly Val	
23 28 33 38	

gga gag ggc ggt ccc cag tgc agt tgg gtg aac tac cgt tgc aca ctg	439
Gly Glu Gly Gly Pro Gln Cys Ser Trp Val Asn Tyr Arg Cys Thr Leu	
39 44 49 54	

gag ttt ctg gtg tct ttg ctt gga act gac cta gct cgt ggc agg ggg	487
Glu Phe Leu Val Ser Leu Leu Gly Thr Asp Leu Ala Arg Gly Arg Gly	
55 60 65 70	

aac tcg gct agc ggc ccc aca gcc cct gct gac tca aaa caa cta atg	535
Asn Ser Ala Ser Gly Pro Thr Ala Pro Ala Asp Ser Lys Gln Leu Met	
71 76 81 86	

aac tct gga agc cca gcc agg gac aat gca cct tca cag aga ttc tgc	583
Asn Ser Gly Ser Pro Ala Arg Asp Asn Ala Pro Ser Gln Arg Phe Cys	
87 92 97 102	
act aat ctg agt gaa ggt cta agg ttt gga atc tcc ccc tca tgg aga	631
Thr Asn Leu Ser Glu Gly Leu Arg Phe Gly Ile Ser Pro Ser Trp Arg	
103 108 113 118	
gaa gct ttg tat ggc tgt cat gct tag acagt gattcctgca acttgacctt	683
Glu Ala Leu Tyr Gly Cys His Ala *	
119 124	
caggctggga gaggtggaga gccatgcctg ttctccttcc ttgctatgga atttgctgac	743
acaatatctt ccgctggtg ctgggcatat cctaagaact tacaacttcc ctgtattatc	803
ctgtgtgagc agctgtcacc ttattggggg aaaaatgcct gaaaattagg gggcacttca	863
agtagatagc ttctatttcc tatattatcc ttacttttaa aatgctttat tggaattatt	923
ttgataaaaag caaatacttg tatataagac aaatatagga aatagaagct atctacttga	983
agtccccct aattttcagg catttttccc ccaataaggt gacagctgct cacacaggat	1043
aatacaggaa agttgtaagt tcttaggata tgcccagcac caggcggaag atattgtgtc	1103
agcaaattcc atagcaagga aggagaacag gcatggctct ccacctctcc cagcctgaag	1163
gtcaagttgc aggaatcact gtctaagcat gacagccata caaagcttct ctccatgagg	1223
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tgccctggc tgggcttcca gagttcattc ttactcaag gataacacgg cgatgaacgt	1343
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gccacgagct aggtcagttc caagcaaaga caccagaaac tccagtgtgc aacggtagtt	1463
cacccaactg cactggggac cgccctctcc taccacagcc aggccgcgac gtggccgccc	1523
gccggctgct ggcgaaaggc agcgcaagcc gttgggatcc cctgctcccc ctactcaac	1583
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<220>
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<222> (167)..(1093)

<400> 178

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gacgtggggg cggccacggc aggattaacc tccatttcag ctaatc atg gga gag 175
Met Gly Glu
1

att aaa gtc tct cct gat tat aac tgg ttt aga ggt aca gtt ccc ctt 223
Ile Lys Val Ser Pro Asp Tyr Asn Trp Phe Arg Gly Thr Val Pro Leu
4 9 14 19

aaa aag att att gtg gat gat gat gac agt aag ata tgg tcg ctc tat 271
Lys Lys Ile Ile Val Asp Asp Asp Asp Ser Lys Ile Trp Ser Leu Tyr
20 25 30 35

gac gcg ggc ccc cga agt atc agg tgt cct ctc ata ttc ctg ccc cct 319
Asp Ala Gly Pro Arg Ser Ile Arg Cys Pro Leu Ile Phe Leu Pro Pro
36 41 46 51

gtc agt gga act gca gat gtc ttt ttc cgg cag att ttg gct ctg act 367
Val Ser Gly Thr Ala Asp Val Phe Phe Arg Gln Ile Leu Ala Leu Thr
52 57 62 67

gga tgg ggt tac cgg gtt atc gct ttg cag tat cca gtt tat tgg gac 415
Gly Trp Gly Tyr Arg Val Ile Ala Leu Gln Tyr Pro Val Tyr Trp Asp
68 73 78 83

cat ctc gag ttc tgt gat gga ttc aga aaa ctt tta gac cat tta caa 463
His Leu Glu Phe Cys Asp Gly Phe Arg Lys Leu Leu Asp His Leu Gln
84 89 94 99

ttg gat aaa gtt cat ctt ttt ggc gct tct ttg gga ggc ttt ttg gcc 511
Leu Asp Lys Val His Leu Phe Gly Ala Ser Leu Gly Gly Phe Leu Ala
100 105 110 115

cag aaa ttt gct gaa tac act cac aaa tct cct aga gtc cat tcc cta 559
Gln Lys Phe Ala Glu Tyr Thr His Lys Ser Pro Arg Val His Ser Leu
116 121 126 131

atc ctc tgc aat tcc ttc agt gac acc tct atc ttc aac caa act tgg 607
Ile Leu Cys Asn Ser Phe Ser Asp Thr Ser Ile Phe Asn Gln Thr Trp
132 137 142 147

act gca aac agc ttt tgg ctg atg cct gca ttt atg ctc aaa aaa ata 655
Thr Ala Asn Ser Phe Trp Leu Met Pro Ala Phe Met Leu Lys Lys Ile
148 153 158 163

gtt ctt gga aat ttt tca tct ggc ccg gtg gac cct atg atg gct gat 703
Val Leu Gly Asn Phe Ser Ser Gly Pro Val Asp Pro Met Met Ala Asp
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gcc att gat ttc atg gta gac agg cta gaa agt ttg ggt cag agt gaa 751
Ala Ile Asp Phe Met Val Asp Arg Leu Glu Ser Leu Gly Gln Ser Glu

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Leu Ala Ser Arg Leu Thr Leu Asn Cys Gln Asn Ser Tyr Val Glu Pro				
196	201	206	211	
cat aaa att cgg gac ata cct gta act att atg gat gtg ttt gat cag				847
His Lys Ile Arg Asp Ile Pro Val Thr Ile Met Asp Val Phe Asp Gln				
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agt gcg ctt tca act gaa gct aaa gaa gaa atg tac aag ctg tat cct				895
Ser Ala Leu Ser Thr Glu Ala Lys Glu Glu Met Tyr Lys Leu Tyr Pro				
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Asn Ala Arg Arg Ala His Leu Lys Thr Gly Gly Asn Phe Pro Tyr Leu				
244	249	254	259	
tgc aga agt gca gag gtc aat ctt tat gta cag ata cat ttg ctg caa				991
Cys Arg Ser Ala Glu Val Asn Leu Tyr Val Gln Ile His Leu Leu Gln				
260	265	270	275	
ttc cat gga acc aaa tac gcg gcc att gac cca tca atg gtc agt gcc				1039
Phe His Gly Thr Lys Tyr Ala Ala Ile Asp Pro Ser Met Val Ser Ala				
276	281	286	291	
gag gag ctt gag gtg cag aaa ggc agc ctt ggc atc agc cag gag gag				1087
Glu Glu Leu Glu Val Gln Lys Gly Ser Leu Gly Ile Ser Gln Glu Glu				
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Gln *				
308				
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ttcttctctg gcagcaatga agcagctgct gaccagctc tagttttcgg gaagtcagat      180
gaccttttcc ctcccgcggc tctctacctc tcgccgcccc tagggaggac acc   atg      236
                                   Met
                                   1

ggc cca ctg atg gtt ctt ttt tgc ctg ctg ttc ctg tac cca ggt ctg      284
Gly Pro Leu Met Val Leu Phe Cys Leu Leu Phe Leu Tyr Pro Gly Leu
   2                               7                               12                               17

gca gac tcg gct ccc tcc tgc cct cag aac gtg aat atc tcg ggt ggc      332
Ala Asp Ser Ala Pro Ser Cys Pro Gln Asn Val Asn Ile Ser Gly Gly
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acc ttc acc ctc agc cat ggc tgg gct cct ggg agc ctt ctc acc tac      380
Thr Phe Thr Leu Ser His Gly Trp Ala Pro Gly Ser Leu Leu Thr Tyr
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tcc tgc ccc cag ggc ctg tac cca tcc cca gca tca cgg ctg tgc aag      428
Ser Cys Pro Gln Gly Leu Tyr Pro Ser Pro Ala Ser Arg Leu Cys Lys
  50                               55                               60                               65

agc agc gga cag tgg cag acc cca gga gcc acc cgg tct ctg tct aag      476
Ser Ser Gly Gln Trp Gln Thr Pro Gly Ala Thr Arg Ser Leu Ser Lys
  66                               71                               76                               81

gcg gtc tgc aaa cct gtg cgc tgt cca gcc cct gtc tcc ttt gag aat      524
Ala Val Cys Lys Pro Val Arg Cys Pro Ala Pro Val Ser Phe Glu Asn
  82                               87                               92                               97

ggc att tat acc cca cgg ctg ggg tcc tat ccc gtg ggt ggc aat gtg      572
Gly Ile Tyr Thr Pro Arg Leu Gly Ser Tyr Pro Val Gly Gly Asn Val
  98                               103                               108                               113

agc ttc gag tgt gag gat ggc ttc ata ttg cgg ggc tcg cct gtg cgt      620
Ser Phe Glu Cys Glu Asp Gly Phe Ile Leu Arg Gly Ser Pro Val Arg
 114                               119                               124                               129

cag tgt cgc ccc aac ggc atg tgg gat gga gaa aca gct gtg tgt gat      668
Gln Cys Arg Pro Asn Gly Met Trp Asp Gly Glu Thr Ala Val Cys Asp
 130                               135                               140                               145

aat ggg gct ggc cac tgc ccc aac cca ggc att tca ctg ggc gca gtg      716

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Ser Ser Asn Leu Val Leu Thr Gly Ser Ser Glu Arg Glu Cys Gln Gly	
178 183 188 193	
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Asn Gly Val Trp Ser Gly Thr Glu Pro Ile Cys Arg Gln Pro Tyr Ser	
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tat gac ttc cct gag gac gtg gcc cct gcc ctg ggc act tcc ttc tcc	908
Tyr Asp Phe Pro Glu Asp Val Ala Pro Ala Leu Gly Thr Ser Phe Ser	
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His Met Leu Gly Ala Thr Asn Pro Thr Gln Lys Thr Lys Glu Ser Leu	
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Gly Arg Lys Ile Gln Ile Gln Arg Ser Gly His Leu Asn Leu Tyr Leu	
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Leu Leu Asp Cys Ser Gln Ser Val Ser Glu Asn Asp Phe Leu Ile Phe	
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Lys Glu Ser Ala Ser Leu Met Val Asp Arg Ile Phe Ser Phe Glu Ile	
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Asn Val Ser Val Ala Ile Ile Thr Phe Ala Ser Glu Pro Lys Val Leu	
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Met Ser Val Leu Asn Asp Asn Ser Arg Asp Met Thr Glu Val Ile Ser	
306 311 316 321	
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Ser Leu Glu Asn Ala Asn Tyr Lys Asp His Glu Asn Gly Thr Gly Thr	
322 327 332 337	
aac acc tat gcg gcc tta aac agt gtc tat ctc atg atg aac aac caa	1292
Asn Thr Tyr Ala Ala Leu Asn Ser Val Tyr Leu Met Met Asn Asn Gln	
338 343 348 353	
atg cga ctc ctc ggc atg gaa acg atg gcc tgg cag gaa atc cga cat	1340
Met Arg Leu Leu Gly Met Glu Thr Met Ala Trp Gln Glu Ile Arg His	
354 359 364 369	
gcc atc atc ctt ctg aca gat gga aag tcc aat atg ggt ggc tct ccc	1388
Ala Ile Ile Leu Leu Thr Asp Gly Lys Ser Asn Met Gly Gly Ser Pro	

370	375	380	385	
aag aca gct gtt gac cat atc aga gag atc ctg aac atc aac cag aag				1436
Lys Thr Ala Val Asp His Ile Arg Glu Ile Leu Asn Ile Asn Gln Lys				
386	391	396	401	
agg aat gac tat ctg gac atc tat gcc atc ggg gtg ggc aag ctg gat				1484
Arg Asn Asp Tyr Leu Asp Ile Tyr Ala Ile Gly Val Gly Lys Leu Asp				
402	407	412	417	
gtg gac tgg aga gaa ctg aat gag cta ggg tcc aag aag gat ggt gag				1532
Val Asp Trp Arg Glu Leu Asn Glu Leu Gly Ser Lys Lys Asp Gly Glu				
418	423	428	433	
agg cat gcc ttc att ctg cag gac aca aag gct ctg cac cag gtc ttt				1580
Arg His Ala Phe Ile Leu Gln Asp Thr Lys Ala Leu His Gln Val Phe				
434	439	444	449	
gaa cat atg ctg gat gtc tcc aag ctc aca gac acc atc tgc ggg gtg				1628
Glu His Met Leu Asp Val Ser Lys Leu Thr Asp Thr Ile Cys Gly Val				
450	455	460	465	
ggg aac atg tca gca aac gcc tct gac cag gag agg aca ccc tgg cat				1676
Gly Asn Met Ser Ala Asn Ala Ser Asp Gln Glu Arg Thr Pro Trp His				
466	471	476	481	
gtc act att aag ccc aag agc caa gag acc tgc cgg ggg gcc ctc atc				1724
Val Thr Ile Lys Pro Lys Ser Gln Glu Thr Cys Arg Gly Ala Leu Ile				
482	487	492	497	
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Ser Asp Gln Trp Val Leu Thr Ala Ala His Cys Phe Arg Asp Gly Asn				
498	503	508	513	
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514	519	524	529	
ggc aaa gaa ttc ctt att gag aag gcg gtg atc tcc cca ggg ttt gat				1868
Gly Lys Glu Phe Leu Ile Glu Lys Ala Val Ile Ser Pro Gly Phe Asp				
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Val Phe Ala Lys Lys Asn Gln Gly Ile Leu Glu Phe Tyr Gly Asp Asp				
546	551	556	561	
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Ile Ala Leu Leu Lys Leu Ala Gln Lys Val Lys Met Ser Thr His Ala				
562	567	572	577	
agg ccc atc tgc ctt ccc tgc acg atg gag gcc aat ctg gct ctg cgg				2012
Arg Pro Ile Cys Leu Pro Cys Thr Met Glu Ala Asn Leu Ala Leu Arg				
578	583	588	593	
aga cct caa ggc agc acc tgt agg gac cat gag aat gaa ctg ctg aac				2060
Arg Pro Gln Gly Ser Thr Cys Arg Asp His Glu Asn Glu Leu Leu Asn				
594	599	604	609	

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Lys Gln Ser Val Pro Ala His Phe Val Ala Leu Asn Gly Ser Lys Leu	
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Asn Ile Asn Leu Lys Met Gly Val Glu Trp Thr Ser Cys Ala Glu Val	
626 631 636 641	
gtc tcc caa gaa aaa acc atg ttc ccc aac ttg aca gat gtc agg gag	2204
Val Ser Gln Glu Lys Thr Met Phe Pro Asn Leu Thr Asp Val Arg Glu	
642 647 652 657	
gtg gtg aca gac cag ttc cta tgc agt ggg acc cag gag gat gag agt	2252
Val Val Thr Asp Gln Phe Leu Cys Ser Gly Thr Gln Glu Asp Glu Ser	
658 663 668 673	
ccc tgc aag gga gaa tct ggg gga gca gtt ttc ctt gag cgg aga ttc	2300
Pro Cys Lys Gly Glu Ser Gly Gly Ala Val Phe Leu Glu Arg Arg Phe	
674 679 684 689	
agg ttt ttt cag gtg ggt ctg gtg agc tgg ggt ctt tac aac ccc tgc	2348
Arg Phe Phe Gln Val Gly Leu Val Ser Trp Gly Leu Tyr Asn Pro Cys	
690 695 700 705	
ctt ggc tct gct gac aaa aac tcc cgc aaa agg gcc cct cgt agc aag	2396
Leu Gly Ser Ala Asp Lys Asn Ser Arg Lys Arg Ala Pro Arg Ser Lys	
706 711 716 721	
gtc ccg ccg cca cga gac ttt cac atc aat ctc ttc cgc atg cag ccc	2444
Val Pro Pro Pro Arg Asp Phe His Ile Asn Leu Phe Arg Met Gln Pro	
722 727 732 737	
tgg ctg agg cag cac ctg ggg gat gtc ctg aat ttt tta ccc ctc tag	2492
Trp Leu Arg Gln His Leu Gly Asp Val Leu Asn Phe Leu Pro Leu *	
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Ile Val Gly Thr Arg Ala Leu Ala Ala His Pro His Cys Ser Pro Gly	
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Leu Leu Pro Thr Pro Leu Leu Arg Val Ser Thr Leu Leu Phe Lys Leu	
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Ala Ser Phe Thr Met Gly Asn Leu Pro Pro Ser Ile Pro Pro Ser Ser	
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Pro Leu Ala Cys Val Leu Lys Asn Leu Lys Pro Leu Gln Leu Thr Pro	
64 69 74 79	
gac cta aaa cct aag tgt ctt att ttc ttc tgc aac acc gct ggg ccc	468
Asp Leu Lys Pro Lys Cys Leu Ile Phe Phe Cys Asn Thr Ala Gly Pro	
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Gln Tyr Lys Leu Asp Asn Asp Ser Lys *	
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Met Tyr Val
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Cys Val Arg Met Cys Ala Cys Thr Cys Val Cys Val Leu Gly Met His
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aag cat gca cgt gtg tat gaa tgt gcg tgt gta tgc atg agc acg tat 993
Lys His Ala Arg Val Tyr Glu Cys Ala Cys Val Cys Met Ser Thr Tyr
20 25 30 35

gca tgt gtg atg cgc atg ttc ttg tgt act tct ctg agg ggg cac ata 1041
Ala Cys Val Met Arg Met Phe Leu Cys Thr Ser Leu Arg Gly His Ile
36 41 46 51

tgt atg agt gta tga gtgcatacat atgcatatgg tgtacgtgtg tgtactttgt 1096
Cys Met Ser Val *
52

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atg ggg gac aag aaa gat gac aag gac tca ccc aag aag aac aag ggc 165

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Lys	Glu	Arg	Arg	Asp	Leu	Asp	Asp	Leu	Lys	Lys	Glu	Val	Ala	Met	Thr		
17				22					27					32			
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Glu	His	Lys	Met	Ser	Val	Glu	Glu	Val	Cys	Arg	Lys	Tyr	Asn	Thr	Asp		
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Cys	Val	Gln	Gly	Leu	Thr	His	Ser	Lys	Ala	Gln	Glu	Ile	Leu	Ala	Arg		
49				54					59					64			
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Asp	Gly	Pro	Asn	Ala	Leu	Thr	Pro	Pro	Pro	Thr	Thr	Pro	Glu	Trp	Val		
65				70					75					80			
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Lys	Phe	Cys	Arg	Gln	Leu	Phe	Gly	Gly	Phe	Ser	Ile	Leu	Leu	Trp	Ile		
81				86					91					96			
ggg	gct	atc	ctc	tgc	ttc	ctg	gcc	tac	ggg	atc	cag	gcg	ggc	acc	gag	453	
Gly	Ala	Ile	Leu	Cys	Phe	Leu	Ala	Tyr	Gly	Ile	Gln	Ala	Gly	Thr	Glu		
97				102					107					112			
gac	gac	ccc	tct	ggg	gac	aac	ctg	tac	ctg	ggc	atc	gtg	ctg	gcg	gcc	501	
Asp	Asp	Pro	Ser	Gly	Asp	Asn	Leu	Tyr	Leu	Gly	Ile	Val	Leu	Ala	Ala		
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tcc	aag	atc	atg	gag	tcc	ttc	aag	aac	atg	gtg	ccc	cag	caa	gcc	ctg	597	
Ser	Lys	Ile	Met	Glu	Ser	Phe	Lys	Asn	Met	Val	Pro	Gln	Gln	Ala	Leu		
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Val	Ile	Arg	Glu	Gly	Glu	Lys	Met	Gln	Val	Asn	Ala	Glu	Glu	Val	Val		
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Val	Gly	Asp	Leu	Val	Glu	Ile	Lys	Gly	Gly	Asp	Arg	Val	Pro	Ala	Asp		
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Leu	Arg	Ile	Ile	Ser	Ala	His	Gly	Cys	Lys	Val	Asp	Asn	Ser	Ser	Leu		
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Thr	Gly	Glu	Ser	Glu	Pro	Gln	Thr	Arg	Ser	Pro	Asp	Cys	Thr	His	Asp		
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Glu Gly Thr Ala Arg Gly Val Val Val Ala Thr Gly Asp Arg Thr Val				
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Met Gly Arg Ile Ala Thr Leu Ala Ser Gly Leu Glu Val Gly Lys Thr				
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Pro Ile Ala Ile Glu Ile Glu His Phe Ile Gln Leu Ile Thr Gly Val				
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Ala Val Phe Leu Gly Val Ser Phe Phe Ile Leu Ser Leu Ile Leu Gly				
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Tyr Thr Trp Leu Glu Ala Val Ile Phe Leu Ile Gly Ile Ile Val Ala				
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Thr Ala Lys Arg Met Ala Arg Lys Asn Cys Leu Val Lys Asn Leu Glu				
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Gly Thr Leu Thr Gln Asn Arg Met Thr Val Ala His Met Trp Phe Asp				
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Cys Ile Glu Leu Ser Ser Gly Ser Val Lys Leu Met Arg Glu Arg Asn				
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Gln Asn His Thr Glu Ile Val Phe Ala Arg Thr Ser Pro Gln Gln Lys	
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Val Thr Ala Ala Ala Asn Ser Leu Val Glu Gln Met Glu Gln Asn Gly	
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Val Thr Asn Ala Met Arg Glu Asp Leu Ala Asp Asn Trp His Ile Arg	
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Ser Thr Leu Leu Leu Tyr Gln Ser Pro Thr Thr Gly Leu Phe Pro Thr
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Cys Ala Ala Gly Ala Trp Ala Leu Ala Leu Ala Tyr Arg Arg Ile Asp
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986	991	996	1001	
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Leu Leu Met Val Val Ser Ile Val Leu Glu Arg Asn Pro Glu Leu Glu				
1002	1007	1012	1017	
ttt caa gac aaa gta gat cta gac aga ctg gtc aaa gaa gca ttt aat				3242
Phe Gln Asp Lys Val Asp Leu Asp Arg Leu Val Lys Glu Ala Phe Asn				
1018	1023	1028	1033	
gaa ttt caa aaa gat cag agt cgg cta aag gaa att gaa aaa caa gat				3290
Glu Phe Gln Lys Asp Gln Ser Arg Leu Lys Glu Ile Glu Lys Gln Asp				
1034	1039	1044	1049	
gac atg act tcc ttt tac aac act cct ccc ctg gga aaa aga gga aca				3338
Asp Met Thr Ser Phe Tyr Asn Thr Pro Pro Leu Gly Lys Arg Gly Thr				
1050	1055	1060	1065	
tgc agc tat ttg aca aag gcg gtg atg aat ctg ctg ctg gaa gga gaa				3386
Cys Ser Tyr Leu Thr Lys Ala Val Met Asn Leu Leu Leu Glu Gly Glu				
1066	1071	1076	1081	

gtc aag cca aac aat gat gac ccg tgt ctg att agc tag tggggaaggt 3435
 Val Lys Pro Asn Asn Asp Asp Pro Cys Leu Ile Ser *
 1082 / 1087 1092

gtaggaagct ctgttgagac acatgttctg aagtgtgttg tgtttcatgt tcaagcttaa 3495
 tcaaggcagc cattaatata cgaactgagc atgctgggga ggtgaatgcc acatccttgg 3555
 cgggggttatg gacctcttgc atgtcatagc caatctaacg gtaatggtaa atgcttttaa 3615
 tcaagcagga aaaagtcttc atgattatgc caactataat agtaatcctc actgagtgat 3675
 aaaaatagtt tatgaattga aaatttgccg ctgcatgttg tatgatcaaa tagttcatca 3735
 aaatgaatct ttgctctttg gactgaattc ttaccatact gccattaaaa taaatttgcc 3795
 aactagtaat gcatactgga aatcaaaaaga tactgaaaga atgggtgaact tctcttagtg 3855
 gtattgtcat gctaaaagat gttaatatat atcataaaag caaagtcagc cagctgatat 3915
 ttttggttctc-aaaaactgca-ttattaataa tatttttagta tacagagcta ttctacagtt -3975
 ttacattgt aaacatgact gtgggtttgt atttgctaaa tataggggtt ggactaaaat 4035
 ataataaatc tgtaccttat caaacatttt ctttgagctc ctgctaaaaa taggacatgt 4095
 ctatgattgt tcaaaaatat gttaaattta ggctcagcac agtagctcac acctgaaatc 4155
 ttagcacttc gggaggctga ggcagggtga tcacttgagg ttaggagttc aagaccagcc 4215
 cagccaacat ggtgaaaacc ctgtctctac taaaaataca aaaattagcc aggcattgatg 4275
 gtgcatgcct ttaaaccocag ctactgagga ggctgaggca tgagaattgc ttgaaccagg 4335
 agacggaggt tgcagtgagc tgaaatcctg ccactgcaca ccagcctggg tgacagagcg 4395
 agactccatc tcaaaaaaaaa aaaa 4419

<210> 188
 <211> 1521
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (595) .. (1083)

<220>
 <221> misc_feature
 <222> (1) ... (1521)
 <223> n = a,t,c or g

<400> 188

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aggtagggcaa ttccggtcca caaggtcata aggagaacag gctagaggag cagccctctc	120
ttccttaaca tgtaatttct gaattttgggt cccagtggagt cctgtacttt tcatcatttc	180
cgagccagag agaagagggga aaaagaatag aagacaggca aattttctcat aaaaataaaa	240
tccagaaggc acacatttca cttctgctaa catctcattg gccaaaactt agaacctggc	300
tatagttacc tgcaaaggag gctggaaatg cagtctctag ctaagcaatc atatgtcaga	360
aattggcatt tccaaatacc cagtggatat tcatcaggat atacaaatga gaagttggaa	420
ncctgggaat tcttagaaat ttctgaaata ataagttatc cttttaaaaa aaaaaacttt	480
tatttttaggt tcagggatac atgtataggt ttgttataaa gataaaactcg tgttattctg	540
aaaagacttc catttgcaga catcgctgct gcccagaact ccctgccacc agcc atg	597
	Met
	1
gcc aac ccc act gtg ttc ttc aac att gca att gat agt gag tcc ttg	645
Ala Asn Pro Thr Val Phe Phe Asn Ile Ala Ile Asp Ser Glu Ser Leu	
2 7 12 17	
ggc tgc atc tcc ttc aag cta ttt gca gac aaa gtt cta aag atg gaa	693
Gly Cys Ile Ser Phe Lys Leu Phe Ala Asp Lys Val Leu Lys Met Glu	
18 23 28 33	
gaa aat ttt tgt gct ctg aac act gga gag aaa gta ttt ggt gat aaa	741
Glu Asn Phe Cys Ala Leu Asn Thr Gly Glu Lys Val Phe Gly Asp Lys	
34 39 44 49	
ggg ccc tgc ttt tac aga att att ccg ggg tgt tgt cag ggt ggt gac	789
Gly Pro Cys Phe Tyr Arg Ile Ile Pro Gly Cys Cys Gln Gly Gly Asp	
50 55 60 65	
ttc aca cac cat aat ggc act ggt ggc aag tcc ctc tac agc aag gaa	837
Phe Thr His His Asn Gly Thr Gly Gly Lys Ser Leu Tyr Ser Lys Glu	
66 71 76 81	
ttt gat gat gag aac ttc atc cta aag cat aca gct cct ggc gtc ttg	885
Phe Asp Asp Glu Asn Phe Ile Leu Lys His Thr Ala Pro Gly Val Leu	
82 87 92 97	
tcc acg gca aat gct gga ccc acc aca aat ggt tcc cag ttt ttc atc	933
Ser Thr Ala Asn Ala Gly Pro Thr Thr Asn Gly Ser Gln Phe Phe Ile	
98 103 108 113	
tgt act gcc aag aca gag gat gga tgc cag cat gtg gtc ttt ggc aag	981
Cys Thr Ala Lys Thr Glu Asp Gly Cys Gln His Val Val Phe Gly Lys	
114 119 124 129	
gtg aaa gat ggc atg agt att gtg gaa gcc ctg gaa cgc tct ggg tcc	1029
Val Lys Asp Gly Met Ser Ile Val Glu Ala Leu Glu Arg Ser Gly Ser	
130 135 140 145	

agg aat ggt aag acc agc aag aag atc aca gct gct aac tgt gga caa 1077
 Arg Asn Gly Lys Thr Ser Lys Lys Ile Thr Ala Ala Asn Cys Gly Gln
 146 151 156 161

ctc taa taaatttgat tgttttatct gaaccaccag atcgttcctt ctatagctca 1133
 Leu *
 162

ggaaagcatg cttccacccc atttgctcac agcatcctat aatctttgca cagtcctttg 1193

ggttccatat tttccttata ctcttccatg tctagctgga tcgcagagtt aagtttataa 1253

ttacaaaatg aaaactaagt aacaagaaga aaataaaaaga cttccagcaa tttttataact 1313

ctttagtcac tactgtggat atctaaaaga aattggttta ataaataaga aatattacat 1373

ttagcaaatt tataaacaac tatagcctga gattnnngn gntcaaactt tagaaaatac 1433

cagtgaacat ttttgggtaa tattcaaaga atgtgacatt cagatctont ggnttcocncg 1493

acggttcctc aggtctctaa ngggacct 1521

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 <211> 2413
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (258) .. (1922)

<400> 189
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cctccccagg ccgcgagcgc ccctgccgcg gtgcctggcc tcccctccca gactgcaggg 120

acagcacccg gtaactgcga gtggagcgga ggacccgagc ggctgaggag agaggagggc 180

gcggcttagc tgctacgggg tccggccggc gccctcccga ggggggctca ggaggaggaa 240

ggaggacccg tgcgaga atg cct ctg ccc tgg agc ctt gcg ctc ccg ctg 290
 Met Pro Leu Pro Trp Ser Leu Ala Leu Pro Leu
 1 5

ctg ctc tcc tgg gtg gca ggt ggt ttc ggg aac gcg gcc agt gca agg 338
 Leu Leu Ser Trp Val Ala Gly Gly Phe Gly Asn Ala Ala Ser Ala Arg
 12 17 22 27

cat cac ggg ttg tta gca tcg gca cgt cag cct ggg gtc tgt cac tat 386
 His His Gly Leu Leu Ala Ser Ala Arg Gln Pro Gly Val Cys His Tyr
 28 33 38 43

gga act aaa ctg gcc tgc tgc tac ggc tgg aga aga aac agc aag gga 434

Gly	Thr	Lys	Leu	Ala	Cys	Cys	Tyr	Gly	Trp	Arg	Arg	Asn	Ser	Lys	Gly	
44					49					54					59	
gtc	tgt	gaa	gct	aca	tgc	gaa	cct	gga	tgt	aag	ttt	ggg	gag	tgc	gtg	482
Val	Cys	Glu	Ala	Thr	Cys	Glu	Pro	Gly	Cys	Lys	Phe	Gly	Glu	Cys	Val	
60					65					70					75	
gga	cca	aac	aaa	tgc	aga	tgc	ttt	cca	gga	tac	acc	ggg	aaa	acc	tgc	530
Gly	Pro	Asn	Lys	Cys	Arg	Cys	Phe	Pro	Gly	Tyr	Thr	Gly	Lys	Thr	Cys	
76					81					86					91	
agt	caa	gat	gtg	aat	gag	tgt	gga	atg	aaa	ccc	cgg	cca	tgc	caa	cac	578
Ser	Gln	Asp	Val	Asn	Glu	Cys	Gly	Met	Lys	Pro	Arg	Pro	Cys	Gln	His	
92					97					102					107	
aga	tgt	gtg	aat	aca	cac	gga	agc	tac	aag	tgc	ttt	tgc	ctc	agt	ggc	626
Arg	Cys	Val	Asn	Thr	His	Gly	Ser	Tyr	Lys	Cys	Phe	Cys	Leu	Ser	Gly	
108					113					118					123	
cac	atg	ctc	atg	cca	gat	gct	acg	tgt	gtg	aac	tct	agg	aca	tgt	gcc	674
His	Met	Leu	Met	Pro	Asp	Ala	Thr	Cys	Val	Asn	Ser	Arg	Thr	Cys	Ala	
124					129					134					139	
atg	ata	aac	tgt	cag	tac	agc	tgt	gaa	gac	aca	gaa	gaa	ggg	cca	cag	722
Met	Ile	Asn	Cys	Gln	Tyr	Ser	Cys	Glu	Asp	Thr	Glu	Glu	Gly	Pro	Gln	
140					145					150					155	
tgc	ctg	tgt	cca	tcc	tca	gga	ctc	cgc	ctg	gcc	cca	aat	gga	aga	gac	770
Cys	Leu	Cys	Pro	Ser	Ser	Gly	Leu	Arg	Leu	Ala	Pro	Asn	Gly	Arg	Asp	
156					161					166					171	
tgt	cta	gat	att	gat	gaa	tgt	gcc	tct	ggg	aaa	gtc	atc	tgt	ccc	tac	818
Cys	Leu	Asp	Ile	Asp	Glu	Cys	Ala	Ser	Gly	Lys	Val	Ile	Cys	Pro	Tyr	
172					177					182					187	
aat	cga	aga	tgt	gtg	aac	aca	ttt	gga	agc	tac	tac	tgc	aaa	tgt	cac	866
Asn	Arg	Arg	Cys	Val	Asn	Thr	Phe	Gly	Ser	Tyr	Tyr	Cys	Lys	Cys	His	
188					193					198					203	
att	ggg	ttc	gaa	ctg	caa	tat	atc	agt	gga	cga	tat	gac	tgt	ata	gat	914
Ile	Gly	Phe	Glu	Leu	Gln	Tyr	Ile	Ser	Gly	Arg	Tyr	Asp	Cys	Ile	Asp	
204					209					214					219	
ata	aat	gaa	tgt	act	atg	gat	agc	cat	acg	tgc	agc	cac	cat	gcc	aat	962
Ile	Asn	Glu	Cys	Thr	Met	Asp	Ser	His	Thr	Cys	Ser	His	His	Ala	Asn	
220					225					230					235	
tgc	ttc	aat	acc	caa	ggg	tcc	ttc	aag	tgt	aaa	tgc	aag	cag	gga	tat	1010
Cys	Phe	Asn	Thr	Gln	Gly	Ser	Phe	Lys	Cys	Lys	Cys	Lys	Gln	Gly	Tyr	
236					241					246					251	
aaa	ggc	aat	gga	ctt	cgg	tgt	tct	gct	atc	cct	gaa	aat	tct	gtg	aag	1058
Lys	Gly	Asn	Gly	Leu	Arg	Cys	Ser	Ala	Ile	Pro	Glu	Asn	Ser	Val	Lys	
252					257					262					267	
gaa	gtc	ctc	aga	gca	cct	ggg	acc	atc	aaa	gac	aga	atc	aag	aag	ttg	1106
Glu	Val	Leu	Arg	Ala	Pro	Gly	Thr	Ile	Lys	Asp	Arg	Ile	Lys	Lys	Leu	

268	273	278	283	
ctt gct cac aaa aac agc atg aaa aag aag gca aaa att aaa aat gtt				1154
Leu Ala His Lys Asn Ser Met Lys Lys Lys Ala Lys Ile Lys Asn Val				
284	289	294	299	
acc cca gaa ccc acc agg act cct acc cct aag gtg aac ttg cag ccc				1202
Thr Pro Glu Pro Thr Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro				
300	305	310	315	
ttc aac tat gaa gag ata gtt tcc aga ggc ggg aac tct cat gga ggt				1250
Phe Asn Tyr Glu Glu Ile Val Ser Arg Gly Gly Asn Ser His Gly Gly				
316	321	326	331	
aaa aaa ggg aat gaa gag aaa atg aaa gag ggg ctt gag gat gag aaa				1298
Lys Lys Gly Asn Glu Glu Lys Met Lys Glu Gly Leu Glu Asp Glu Lys				
332	337	342	347	
aga gaa gag aaa gcc ctg aag aat gac ata gag gag cga agc ctg cga				1346
Arg Glu Glu Lys Ala Leu Lys Asn Asp Ile Glu Glu Arg Ser Leu Arg				
348	353	358	363	
gga gat gtg ttt ttc cct aag gtg aat gaa gca ggt gaa ttc ggc ctg				1394
Gly Asp Val Phe Phe Pro Lys Val Asn Glu Ala Gly Glu Phe Gly Leu				
364	369	374	379	
att ctg gtc caa agg aaa gcg cta act tcc aaa ctg gaa cat aaa gca				1442
Ile Leu Val Gln Arg Lys Ala Leu Thr Ser Lys Leu Glu His Lys Ala				
380	385	390	395	
gat tta aat atc tcg gtt gac tgc agc ttc aat cat ggg atc tgt gac				1490
Asp Leu Asn Ile Ser Val Asp Cys Ser Phe Asn His Gly Ile Cys Asp				
396	401	406	411	
tgg aaa cag gat aga gaa gat gat ttt gac tgg aat cct gct gat cga				1538
Trp Lys Gln Asp Arg Glu Asp Asp Phe Asp Trp Asn Pro Ala Asp Arg				
412	417	422	427	
gat aat gct att ggc ttc tat atg gca gtt ccg gcc ttg gca ggt cac				1586
Asp Asn Ala Ile Gly Phe Tyr Met Ala Val Pro Ala Leu Ala Gly His				
428	433	438	443	
aag aaa gac att ggc cga ttg aaa ctt ctc cta cct gac ctg caa ccc				1634
Lys Lys Asp Ile Gly Arg Leu Lys Leu Leu Leu Pro Asp Leu Gln Pro				
444	449	454	459	
caa agc aac ttc tgt ttg ctc ttt gat tac cgg ctg gcc gga gac aaa				1682
Gln Ser Asn Phe Cys Leu Leu Phe Asp Tyr Arg Leu Ala Gly Asp Lys				
460	465	470	475	
gtc ggg aaa ctt cga gtg ttt gtg aaa aac agt aac aat gcc ctg gca				1730
Val Gly Lys Leu Arg Val Phe Val Lys Asn Ser Asn Asn Ala Leu Ala				
476	481	486	491	
tgg gag aag acc acg agt gag gat gaa aag tgg aag aca ggg aaa att				1778
Trp Glu Lys Thr Thr Ser Glu Asp Glu Lys Trp Lys Thr Gly Lys Ile				
492	497	502	507	

cag ttg tat caa gga act gat gct acc aaa agc atc att ttt gaa gca	1826
Gln Leu Tyr Gln Gly Thr Asp Ala Thr Lys Ser Ile Ile Phe Glu Ala	
508 513 518 523	

gaa cgt ggc aag ggc aaa acc ggc gaa atc gca gtg gat ggc gtc ttg	1874
Glu Arg Gly Lys Gly Lys Thr Gly Glu Ile Ala Val Asp Gly Val Leu	
524 529 534 539	

ctt gtt tca ggc tta tgt cca gat agc ctt tta tct gtg gat gac tga	1922
Leu Val Ser Gly Leu Cys Pro Asp Ser Leu Leu Ser Val Asp Asp *	
540 545 550 555	

atgttactat ctttatatctt gactttgtat gtcagttccc tgggttttttt gatattgcat	1982
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cataggacct ctggcatttt agaattacta gctgaaaaat tgtaatgtac caacagaaat	2042
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attattgtaa gatgcctttc ttgtataaga tatgccaaata tttgctttta atatcatatc	2102
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actgtatcctt ctcagtcatt tctgaatcct tccacattat attataaaaat atggaaatgt	2162
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cagtttatct cccctcctca gtatatctga tttgtataag taagttgatg agctttcttc	2222
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tacaacattt ctagaaaata gaaaaaaaag cacagagaaa tgtttaactg tttgactctt	2282
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atgatacttc ttggaaacta tgacatcaaa gatagacttt tgcctaagtg gcttagctgg	2342
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gtctttcata gccaaacttg tatattttaa ttctttgtaa taataatatc caaatcatca	2402
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aaaaaaaaa a	2413
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 <213> Homo sapiens

<220>
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gcggcgccgg ggggtggctcc gcgcgcgggtg gtctcggggg caaaataac atg gca	175
	Met Ala
	1

gcc aga cga att aca cag gag act ttt gat gct gta tta caa gaa aaa	223
Ala Arg Arg Ile Thr Gln Glu Thr Phe Asp Ala Val Leu Gln Glu Lys	
3 8 13 18	

gcc aaa cga tat cac atg gat gcc agt ggt gag gct gta agc gaa act	271
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Ala	Lys	Arg	Tyr	His	Met	Asp	Ala	Ser	Gly	Glu	Ala	Val	Ser	Glu	Thr		
19					24					29					34		
ctt	cag	ttt	aaa	gct	caa	gat	ctc	tta	agg	gca	gtc	cca	aga	tcc	aga	319	
Leu	Gln	Phe	Lys	Ala	Gln	Asp	Leu	Leu	Arg	Ala	Val	Pro	Arg	Ser	Arg		
35					40					45					50		
gca	gag	atg	tat	gat	gac	gtc	cac	agc	gat	ggc	aga	tac	tcc	ctc	agt	367	
Ala	Glu	Met	Tyr	Asp	Asp	Val	His	Ser	Asp	Gly	Arg	Tyr	Ser	Leu	Ser		
51					56					61					66		
gga	tct	gta	gct	cac	tct	aga	gat	gcc	gga	aga	gaa	ggc	ctg	aga	agt	415	
Gly	Ser	Val	Ala	His	Ser	Arg	Asp	Ala	Gly	Arg	Glu	Gly	Leu	Arg	Ser		
67					72					77					82		
gac	gta	ttt	cca	ggg	cct	tcc	ttc	aga	tca	agc	aac	cct	tcc	atc	agt	463	
Asp	Val	Phe	Pro	Gly	Pro	Ser	Phe	Arg	Ser	Ser	Asn	Pro	Ser	Ile	Ser		
83					88					93					98		
gat	gac	agc	tac	ttt	cgc	aaa	gaa	tgt	ggc	cgg	gat	ctg	gaa	ttt	tct	511	
Asp	Asp	Ser	Tyr	Phe	Arg	Lys	Glu	Cys	Gly	Arg	Asp	Leu	Glu	Phe	Ser		
99					104					109					114		
cac	tct	gat	tct	cgg	gac	cag	gtc	att	ggc	cac	cgg	aaa	ttg	ggg	cat	559	
His	Ser	Asp	Ser	Arg	Asp	Gln	Val	Ile	Gly	His	Arg	Lys	Leu	Gly	His		
115					120					125					130		
ttc	cgt	tct	cag	gac	tgg	aaa	ttt	gcg	ctc	cgt	ggc	tct	tgg	gaa	caa	607	
Phe	Arg	Ser	Gln	Asp	Trp	Lys	Phe	Ala	Leu	Arg	Gly	Ser	Trp	Glu	Gln		
131					136					141					146		
gac	ttt	ggc	cat	cca	gtt	tct	caa	gag	tcc	tct	tgg	tca	cag	gag	tat	655	
Asp	Phe	Gly	His	Pro	Val	Ser	Gln	Glu	Ser	Ser	Trp	Ser	Gln	Glu	Tyr		
147					152					157					162		
agt	ttt	ggc	ccc	tct	gca	gtt	ttg	ggg	gac	ttt	gga	tct	tcc	agg	ctg	703	
Ser	Phe	Gly	Pro	Ser	Ala	Val	Leu	Gly	Asp	Phe	Gly	Ser	Ser	Arg	Leu		
163					168					173					178		
att	gag	aaa	gag	tgt	ttg	gag	aag	gag	agt	cgg	gat	tat	gac	gtg	gac	751	
Ile	Glu	Lys	Glu	Cys	Leu	Glu	Lys	Glu	Ser	Arg	Asp	Tyr	Asp	Val	Asp		
179					184					189					194		
cat	cct	ggg	gag	gct	gac	tct	gtg	ctt	agg	ggc	agc	agt	caa	gtc	cag	799	
His	Pro	Gly	Glu	Ala	Asp	Ser	Val	Leu	Arg	Gly	Ser	Ser	Gln	Val	Gln		
195					200					205					210		
gcc	aga	ggc	cga	gct	cta	aac	atc	gtt	gac	cag	gaa	ggc	tcc	ctc	cta	847	
Ala	Arg	Gly	Arg	Ala	Leu	Asn	Ile	Val	Asp	Gln	Glu	Gly	Ser	Leu	Leu		
211					216					221					226		
gga	aag	ggg	gag	act	cag	ggc	ctg	ctc	aca	gct	aag	ggg	ggc	gtt	ggg	895	
Gly	Lys	Gly	Glu	Thr	Gln	Gly	Leu	Leu	Thr	Ala	Lys	Gly	Gly	Val	Gly		
227					232					237					242		
aaa	ctt	gtc	aca	ttg	aga	aat	gtg	agc	aca	aaa	aaa	ata	ccc	acc	gtg	943	
Lys	Leu	Val	Thr	Leu	Arg	Asn	Val	Ser	Thr	Lys	Lys	Ile	Pro	Thr	Val		

243		248		253		258	
aat cgt att act ccc aaa act cag ggc act aac caa atc cag aaa aac							991
Asn Arg Ile Thr Pro Lys Thr Gln Gly Thr Asn Gln Ile Gln Lys Asn							
259		264		269		274	
act cca agt cct gat gtg acc ctg ggg aca aac cca ggg aca gaa gat							1039
Thr Pro Ser Pro Asp Val Thr Leu Gly Thr Asn Pro Gly Thr Glu Asp							
275		280		285		290	
atc cag ttc ccc att cag aag atc cct ctg ggg ctg gat ctg aag aat							1087
Ile Gln Phe Pro Ile Gln Lys Ile Pro Leu Gly Leu Asp Leu Lys Asn							
291		296		301		306	
ctt cgg ctc ccc aga aga aag atg agc ttt gac atc ata gat aag tct							1135
Leu Arg Leu Pro Arg Arg Lys Met Ser Phe Asp Ile Ile Asp Lys Ser							
307		312		317		322	
gat gtt ttt tca aga ttt ggg ata gaa ata atc aaa tgg gca gga ttc							1183
Asp Val Phe Ser Arg Phe Gly Ile Glu Ile Ile Lys Trp Ala Gly Phe							
323		328		333		338	
cac acc ata aaa gat gat att aaa ttt tcc caa ctt ttc cag act ctc							1231
His Thr Ile Lys Asp Asp Ile Lys Phe Ser Gln Leu Phe Gln Thr Leu							
339		344		349		354	
ttt gaa ctt gaa aca gaa acc tgt gct aaa atg ctt gcc tca ttc aaa							1279
Phe Glu Leu Glu Thr Glu Thr Cys Ala Lys Met Leu Ala Ser Phe Lys							
355		360		365		370	
tgt tcc tta aaa cca gag cac aga gat ttt tgc ttt ttt act atc aaa							1327
Cys Ser Leu Lys Pro Glu His Arg Asp Phe Cys Phe Phe Thr Ile Lys							
371		376		381		386	
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Phe Leu Lys His Ser Ala Leu Lys Thr Pro Arg Val Asp Asn Glu Phe							
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Trp Lys Ala Arg Arg Ala Thr Thr Gly Thr Gln Thr Leu Leu Ser Ser	
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Pro Asp Pro Val Gly Pro Ser Pro Gln Asp Pro Ser Leu Glu Ala Ser	
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Gly Pro Ser Pro Lys Pro Ala Gly Val Asp Ile Ser Glu Ala Pro Gln	
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Thr Ser Ser Pro Cys Pro Ser Ala Asp Ile Asp Met Lys Thr Met Glu	
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atg agg tca gtt agc tac gtg cag cgc gtg gcg ctg gag ttc agc ggg 226
Met Arg Ser Val Ser Tyr Val Gln Arg Val Ala Leu Glu Phe Ser Gly
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Ser Leu Phe Pro His Ala Ile Cys Leu Gly Asp Val Asp Asn Asp Thr
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Lys Asn Asp Asp Ser Arg Pro Trp Leu Thr Cys Ser Cys Gln Gly Met
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Leu Thr Cys Val Gly Val Gly Asp Val Cys Asn Lys Gly Lys Asn Leu
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Leu Val Ala Val Ser Ala Glu Gly Trp Phe His Leu Phe Asp Leu Thr

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Glu Glu Gln Arg Pro Val Phe Lys Gln His Ile Pro Ala Asn Thr Lys				
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Val Met Leu Ile Ser Asp Ile Asp Gly Asp Gly Cys Arg Glu Leu Val				
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Gly Glu Gly Pro Glu His Leu Thr Gly Gln Leu Val Ser Leu Lys Lys				
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Trp Met Leu Glu Gly Gln Val Asp Ser Leu Ser Val Thr Leu Gly Pro				
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His Leu Ile Gly Asn Ile Lys Gln Gly His Gly Thr Glu Ser Ser Gly				
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Ser Gly Leu Phe Ala Leu Cys Thr Leu Asp Gly Thr Leu Lys Leu Met				
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Gln Leu Glu Arg Met Glu Ser Thr Asn Leu Val Lys Leu Leu Glu Thr	
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Tyr Glu Val Asn Pro Arg Thr Thr Glu Ile Leu His His Leu Ser Glu	
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Arg Asn Arg Val Arg Asp Arg Asp Val Tyr Leu Val Ile Glu Asp Leu	
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Ala Glu Gln Ile Leu	Ala Thr Ala Val Tyr	Gln Ala Lys Glu Lys Leu		
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aag tca ata gaa aaa	gca aga aaa ggt gct	atc tcc tct gaa gaa ata		546
Lys Ser Ile Glu Lys	Ala Arg Lys Gly Ala	Ile Ser Ser Glu Glu Ile		
133	138	143	148	
att aag tat gca cat	agg atc agt gca agt	aat gct gta tgt gct cca		594
Ile Lys Tyr Ala His	Arg Ile Ser Ala Ser	Asn Ala Val Cys Ala Pro		
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ctg acc tgg gtt cca	ggg gac ccc cgg aga	ccc tac cca act gat tta		642
Leu Thr Trp Val Pro	Gly Asp Pro Arg Arg	Pro Tyr Pro Thr Asp Leu		
165	170	175	180	
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Glu Met Arg Ser Gly	Leu Leu Gly Gln Met	Asn Asn Pro Ser Thr Asn		
181	186	191	196	
ggc gtg aat ggc cat	tta cca gga gat gca	ctt gca gca gga aga ttg		738
Gly Val Asn Gly His	Leu Pro Gly Asp Ala	Leu Ala Ala Gly Arg Leu		
197	202	207	212	
cca gat gtc ctt gct	cca cag tat cca tgg	cag tca aat gac atg tcg		786
Pro Asp Val Leu Ala	Pro Gln Tyr Pro Trp	Gln Ser Asn Asp Met Ser		
213	218	223	228	
atg aat atg tta cca	cca aat cat agt agt	gac ttt ttg ttg gaa cct		834
Met Asn Met Leu Pro	Pro Asn His Ser Ser	Asp Phe Leu Leu Glu Pro		
229	234	239	244	
cct ggg cat aat aaa	gaa aat gaa gat gat	gta gag att atg tca acg		882
Pro Gly His Asn Lys	Glu Asn Glu Asp Asp	Val Glu Ile Met Ser Thr		
245	250	255	260	
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Asp Ser Ser Ser Ser	Ser Ser Glu Ser Asp	*		
261	266	271		

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 Met Asp Asp Trp Lys Pro Ser
 1 5
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 Pro Leu Ile Lys Pro Phe Gly Ala Arg Lys Lys Arg Ser Trp Tyr Leu
 8 13 18 23
 acc tgg aag tat aaa ctg aca aac cag cgg gcc ctg cgg aga ttc tgt 269
 Thr Trp Lys Tyr Lys Leu Thr Asn Gln Arg Ala Leu Arg Arg Phe Cys
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 Gln Thr Gly Ala Val Leu Phe Leu Leu Val Thr Val Ile Val Asn Ile
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 Lys Leu Ile Leu Asp Thr Arg Arg Ala Ile Ser Glu Ala Asn Glu Asp
 56 61 66 71

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Pro Glu Pro Glu Gln Asp Tyr Asp Glu Ala Leu Gly Arg Leu Glu Pro	
72 77 82 87	
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Pro Arg Arg Arg Gly Ser Gly Pro Arg Arg Val Leu Asp Val Glu Val	
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Tyr Ser Ser Arg Ser Lys Val Tyr Val Ala Val Asp Gly Thr Thr Val	
104 109 114 119	
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Leu Glu Asp Glu Ala Arg Glu Gln Gly Arg Gly Ile His Val Ile Val	
120 125 130 135	
ctc aac cag gcc acg ggc cac gtg atg gca aaa cgt gtg ttt gac acg	605
Leu Asn Gln Ala Thr Gly His Val Met Ala Lys Arg Val Phe Asp Thr	
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Tyr Ser Pro His Glu Asp Glu Ala Met Val Leu Phe Leu Asn Met Val	
152 157 162 167	
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Ala Pro Gly Arg Val Leu Ile Cys Thr Val Lys Asp Glu Gly Ser Phe	
168 173 178 183	
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His Leu Lys Asp Thr Ala Lys Ala Leu Leu Arg Ser Leu Gly Ser Gln	
184 189 194 199	
gct ggc cct gcc ctg ggc tgg agg gac aca tgg gcc ttc gtg gga cga	797
Ala Gly Pro Ala Leu Gly Trp Arg Asp Thr Trp Ala Phe Val Gly Arg	
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Lys Gly Gly Pro Val Phe Gly Glu Lys His Ser Lys Ser Pro Ala Leu	
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Ser Ser Trp Gly Asp Pro Val Leu Leu Lys Thr Asp Val Pro Leu Ser	
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Ser Ala Glu Glu Ala Glu Cys His Trp Ala Asp Thr Glu Leu Asn Arg	
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Ser Cys Lys Asp Pro Thr Pro Ile Glu Phe Ser Pro Asp Pro Leu Pro	
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ccc aat tac ctg tac agg atg ctg cgc tct ctg ctt tca gcc cag ggg	1133
Pro Asn Tyr Leu Tyr Arg Met Leu Arg Ser Leu Leu Ser Ala Gln Gly	
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Val Ser Pro Gln Met Ile Thr Val Phe Ile Asp Gly Tyr Tyr Glu Glu	
328 333 338 343	
ccc atg gat gtg gtg gca ctg ttt ggt ctg agg ggc atc cag cat act	1229
Pro Met Asp Val Val Ala Leu Phe Gly Leu Arg Gly Ile Gln His Thr	
344 349 354 359	
ccc atc agc atc aag aat gcc cgc gtg tct cag cac tac aag gcc agc	1277
Pro Ile Ser Ile Lys Asn Ala Arg Val Ser Gln His Tyr Lys Ala Ser	
360 365 370 375	
ctc act gcc act ttc aac ctg ttt ccg gag gcc aag ttt gct gtg gtt	1325
Leu Thr Ala Thr Phe Asn Leu Phe Pro Glu Ala Lys Phe Ala Val Val	
376 381 386 391	
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Leu Glu Glu Asp Leu Asp Ile Ala Val Asp Phe Phe Ser Phe Leu Ser	
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Gln Ser Ile His Leu Leu Glu Glu Asp Asp Ser Leu Tyr Cys Ile Ser	
408 413 418 423	
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Ala Trp Asn Asp Gln Gly Tyr Glu His Thr Ala Glu Asp Pro Ala Leu	
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Leu Tyr Arg Val Glu Thr Met Pro Gly Leu Gly Trp Val Leu Arg Arg	
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Ser Leu Tyr Lys Glu Glu Leu Glu Pro Lys Trp Pro Thr Pro Glu Lys	
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Arg Glu Cys Ile Ile Pro Asp Val Ser Arg Ser Tyr His Phe Gly Ile	
488 493 498 503	
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Val Gly Leu Asn Met Asn Gly Tyr Phe His Glu Ala Tyr Phe Lys Lys	
504 509 514 519	
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His Lys Phe Asn Thr Val Pro Gly Val Gln Leu Arg Asn Val Asp Ser	
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Leu Lys Lys Glu Ala Tyr Glu Val Glu Val His Arg Leu Leu Ser Glu	
536 541 546 551	
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Ala Glu Val Leu Asp His Ser Lys Asn Pro Cys Glu Asp Ser Phe Leu	
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Pro Asp Thr Glu Gly His Thr Tyr Val Ala Phe Ile Arg Met Glu Lys	
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Asp Asp Asp Phe Thr Thr Trp Thr Gln Leu Ala Lys Cys Leu His Ile	
584 589 594 599	
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Trp Asp Leu Asp Val Arg Gly Asn His Arg Gly Leu Trp Arg Leu Phe	
600 605 610 615	
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Arg Lys Lys Asn His Phe Leu Val Val Gly Val Pro Ala Ser Pro Tyr	
616 621 626 631	
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Ser Pro Gly Ser Glu Ser Asn Leu Phe Ile Asp Cys Pro Glu Gly Leu	
632 637 642 647	
gaa aac agg ccg aac ctg gag ggc ctg gat ttc ttt ttg ggc tgg aat	2141
Glu Asn Arg Pro Asn Leu Glu Gly Leu Asp Phe Phe Leu Gly Trp Asn	
648 653 658 663	
gct gcc ctg agg gtg ggg ctg gct ctt act cag gaa act gct gtg ccc	2189
Ala Ala Leu Arg Val Gly Leu Ala Leu Thr Gln Glu Thr Ala Val Pro	
664 669 674 679	
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Asn Pro Trp Thr Gly Pro Ala Gly Ala His Met Leu Thr Gln Thr His	
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Ser Glu Thr Leu Arg His Trp Thr Arg Pro Pro Leu Ser Leu Leu Phe	
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Ser Asn Leu Ser Gly Leu Val Pro Ala Ala Gly Leu Val Pro Ala Leu
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cca cct gct gtg acc ctg ggg ctg aca gct gcc tac acc acc ctg tat      153
Pro Pro Ala Val Thr Leu Gly Leu Thr Ala Ala Tyr Thr Thr Leu Tyr
  19                               24                               29                               34

gcc ctg-ctc-ttc ttc tcc-gtc-tat gcc cag-ctc-tgg ctg gtg-ctt-ctg      201
Ala Leu Leu Phe Phe Ser Val Tyr Ala Gln Leu Trp Leu Val Leu Leu
  35                               40                               45                               50

tat ggg cac aag cgt ctc agc tat cag acg gtg ttc ctg gcc ctc tgt      249
Tyr Gly His Lys Arg Leu Ser Tyr Gln Thr Val Phe Leu Ala Leu Cys
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ctg ctc tgg gcc gcc ttg cgt acc acc ctc ttc tcc ttc tac ttc cga      297
Leu Leu Trp Ala Ala Leu Arg Thr Thr Leu Phe Ser Phe Tyr Phe Arg
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gat act ccc cgc gcc aac cgc ctg ggg ccc ttg ccc ttc tgg ctt ctc      345
Asp Thr Pro Arg Ala Asn Arg Leu Gly Pro Leu Pro Phe Trp Leu Leu
  83                               88                               93                               98

tac tgc tgc ccc gtc tgc ctg cag ttc ttc acc ttg acg ctt atg aac      393
Tyr Cys Cys Pro Val Cys Leu Gln Phe Phe Thr Leu Thr Leu Met Asn
  99                               104                               109                               114

ctc tac ttt gcc cag gtg gtg ttc aag gcc aag gtg aag cgt cgg ccg      441
Leu Tyr Phe Ala Gln Val Val Phe Lys Ala Lys Val Lys Arg Arg Pro
  115                               120                               125                               130

gag atg agc cga ggc ttg ctc gct gtc cga ggg gcc ttt gtg ggg gcc      489
Glu Met Ser Arg Gly Leu Leu Ala Val Arg Gly Ala Phe Val Gly Ala
  131                               136                               141                               146

tcg ctg ctc ttt ctg ctg gtg aac gtg ctg tgt gct gtg ctc tcc cat      537
Ser Leu Leu Phe Leu Leu Val Asn Val Leu Cys Ala Val Leu Ser His
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cgg cgc cgg gca cag ccc tgg gcc ctg ctg ctt gtc cgc gtc ctg gtg      585
Arg Arg Arg Ala Gln Pro Trp Ala Leu Leu Leu Val Arg Val Leu Val
  163                               168                               173                               178

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His	Ala	Pro	Arg	Arg	Arg	Cys	Ala	Asp	Ala	Gly	Glu	Ala	Val	Gly	Ala		
451					456					461					466		
agc	tgc	ggg	cgc	tgc	gcg	gtg	gcc	ctg	ctg	tct	ggc	gtg	tgc	acg	cta	1497	
Ser	Cys	Gly	Arg	Cys	Ala	Val	Ala	Leu	Leu	Ser	Gly	Val	Cys	Thr	Leu		
467					472					477					482		
gtg	tcc	aca	cac	gtg	tgc	gtg	ggc	tct	ggg	tgc	cct	ggc	gcg	gcc	ggc	1545	
Val	Ser	Thr	His	Val	Cys	Val	Gly	Ser	Gly	Cys	Pro	Gly	Ala	Ala	Gly		
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Thr	Pro	Met	Gly	Ala	Gly	Asp	Ala	Gly	Ala	Ser	Ala	Glu	Ser	Ala	Val		
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Thr	Thr	Ala	Pro	Gln	Glu	Pro	Pro	Ala	Arg	Pro	Leu	Gln	Ala	Gly	Ser		
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Gly	Ala	Gly	Pro	Ala	Pro	Gly	Arg	Ala	Met	Arg	Ser	Thr	Thr	Leu	Leu		
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Ala	Leu	Leu	Ala	Leu	Val	Leu	Leu	Tyr	Leu	Val	Ser	Gly	Ala	Leu	Val		
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Phe	Arg	Ala	Leu	Glu	Gln	Pro	His	Glu	Gln	Gln	Ala	Gln	Arg	Glu	Leu		
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Gly	Glu	Val	Arg	Glu	Lys	Phe	Leu	Arg	Ala	His	Pro	Cys	Val	Ser	Asp		
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Gln	Glu	Leu	Gly	Leu	Leu	Ile	Lys	Glu	Val	Ala	Asp	Ala	Leu	Gly	Gly		
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Gly	Ala	Asp	Pro	Glu	Thr	Asn	Ser	Thr	Ser	Asn	Ser	Ser	His	Ser	Ala		
611					616					621					626		
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Cys Ile Phe Tyr Ala Leu Val Gly Ile Pro Leu Phe Gly Ile Leu Leu				
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Ala Gly Val Gly Asp Arg Leu Gly Ser Ser Leu Arg His Gly Ile Gly				
675	680	685	690	
cac att gaa gcc atc ttc ttg aag tgg cac gtg cca ccg gag cta gta				2169
His Ile Glu Ala Ile Phe Leu Lys Trp His Val Pro Pro Glu Leu Val				
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Arg Val Leu Ser Ala Met Leu Phe Leu Leu Ile Gly Cys Leu Leu Phe				
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gtc ctc acg ccc acg ttc gtg ttc tgc tat atg gag gac tgg agc aag				2265
Val Leu Thr Pro Thr Phe Val Phe Cys Tyr Met Glu Asp Trp Ser Lys				
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ctg gag gcc atc tac ttt gtc ata gtg acg ctt acc acc gtg ggc ttt				2313
Leu Glu Ala Ile Tyr Phe Val Ile Val Thr Leu Thr Thr Val Gly Phe				
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ggc gac tat gtg gcc ggc gcg gac ccc agg cag gac tcc ccg gcc tat				2361
Gly Asp Tyr Val Ala Gly Ala Asp Pro Arg Gln Asp Ser Pro Ala Tyr				
755	760	765	770	
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Gln Pro Leu Val Trp Phe Trp Ile Leu Leu Gly Leu Ala Tyr Phe Ala				
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Ser Val Leu Thr Thr Ile Gly Asn Trp Leu Arg Val Val Ser Arg Arg				
787	792	797	802	
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Thr Arg Ala Glu Met Gly Gly Leu Thr Ala Gln Ala Ala Ser Trp Thr				
803	808	813	818	
ggc aca gtg aca gcg cgc gtg acc cag cga gcc ggg ccc gcc gcc ccg				2553
Gly Thr Val Thr Ala Arg Val Thr Gln Arg Ala Gly Pro Ala Ala Pro				
819	824	829	834	
ccg ccg gag aag gag cag cca ctg ctg cct cca ccg ccc tgt cca gcg				2601
Pro Pro Glu Lys Glu Gln Pro Leu Leu Pro Pro Pro Pro Cys Pro Ala				
835	840	845	850	
cag ccg ctg ggc agg ccc cga tcc cct tcg ccc ccc gag aag gct cag				2649
Gln Pro Leu Gly Arg Pro Arg Ser Pro Ser Pro Pro Glu Lys Ala Gln				
851	856	861	866	

ccg cct tcc ccg ccc acg gcc tcg gcc ctg gat tat ccc agc gag aac	2697
Pro Pro Ser Pro Pro Thr Ala Ser Ala Leu Asp Tyr Pro Ser Glu Asn	
867 872 877 882	
ctg gcc ttc atc gac gag tcc tcg gat acg cag agc gag cgc ggc tgc	2745
Leu Ala Phe Ile Asp Glu Ser Ser Asp Thr Gln Ser Glu Arg Gly Cys	
883 888 893 898	
ccg ctg ccc cgc gcg ccg aga ggt cgc cgc cgc cca aat ccc ccc agg	2793
Pro Leu Pro Arg Ala Pro Arg Gly Arg Arg Arg Pro Asn Pro Pro Arg	
899 904 909 914	
aag ccc gtg cgg ccc cgc ggc ccc ggg cgt ccc cga gac aaa ggc gtg	2841
Lys Pro Val Arg Pro Arg Gly Pro Gly Arg Pro Arg Asp Lys Gly Val	
915 920 925 930	
ccg acc ccc cca agg ctt tct gtg tcg ctg ccc cgg gcg ggt gta tcc	2889
Pro Thr Pro Pro Arg Leu Ser Val Ser Leu Pro Arg Ala Gly Val Ser	
931 936 941 946	
ctc aca gca cct cac gac tgt gcc tca aag cct gca tca ata aat gaa	2937
Leu Thr Ala Pro His Asp Cys Ala Ser Lys Pro Ala Ser Ile Asn Glu	
947 952 957 962	
aac ggt ctg cac cgc tgc ggg cgt gac gct ccc gga cgc gag tgg gtg	2985
Asn Gly Leu His Arg Cys Gly Arg Asp Ala Pro Gly Arg Glu Trp Val	
963 968 973 978	
tgg aat tgc ttt cct cgg gcc acc gtg ggg gca cct ctg gcc tcc cgt	3033
Trp Asn Cys Phe Pro Arg Ala Thr Val Gly Ala Pro Leu Ala Ser Arg	
979 984 989 994	
gac ccc cag gcc gag ggt ccc cgg gca ccc agc ctt ggc tgc ccg cag	3081
Asp Pro Gln Ala Glu Gly Pro Arg Ala Pro Ser Leu Gly Cys Pro Gln	
995 1000 1005 1010	
ccc cca ccc aac ccc acg ttc tac ggg atc ccc aac ccg gcc cgg ctc	3129
Pro Pro Pro Asn Pro Thr Phe Tyr Gly Ile Pro Asn Pro Ala Arg Leu	
1011 1016 1021 1026	
agt tcc cca gcc cgc tct tcc ttc ccg ctc cag cca tcc gcg acc ctt	3177
Ser Ser Pro Ala Arg Ser Ser Phe Pro Leu Gln Pro Ser Ala Thr Leu	
1027 1032 1037 1042	
ggc tcc ctc ctt gta tgt ggc cca cag gtg tcg ctc aag tct tcc gac	3225
Gly Ser Leu Leu Val Cys Gly Pro Gln Val Ser Leu Lys Ser Ser Asp	
1043 1048 1053 1058	
cgc caa ggc tcg gac gag gag agc gtg cat agc gac act cgg gac ctg	3273
Arg Gln Gly Ser Asp Glu Ser Val His Ser Asp Thr Arg Asp Leu	
1059 1064 1069 1074	
tgg acc acg acc acg ctg tcc cag gca cag ctg aac atg ccg ctg tcc	3321
Trp Thr Thr Thr Thr Leu Ser Gln Ala Gln Leu Asn Met Pro Leu Ser	
1075 1080 1085 1090	

gag gtc tgc gag ggc ttc gac gat gag ggc cgc aac att agc aag acc	3369
Glu Val Cys Glu Gly Phe Asp Asp Glu Gly Arg Asn Ile Ser Lys Thr	
1091 1096 1101 1106	
/	
cgc ggg tgg cac agc ccg ggg cgg ggc tcg ttg gac gag ggg tac aag	3417
Arg Gly Trp His Ser Pro Gly Arg Gly Ser Leu Asp Glu Gly Tyr Lys	
1107 1112 1117 1122	
gcc agc cac aag ccg gag gaa ctg gac gag cac gcg ctg gtg gag ctg	3465
Ala Ser His Lys Pro Glu Glu Leu Asp Glu His Ala Leu Val Glu Leu	
1123 1128 1133 1138	
gag ttg cac cgc ggc agc tcc atg gaa atc aat ctg ggg gag aag gac	3513
Glu Leu His Arg Gly Ser Ser Met Glu Ile Asn Leu Gly Glu Lys Asp	
1139 1144 1149 1154	
act gca tcc cag atc gag gcc gaa aag tct tcc tca atg tca tca ctc	3561
Thr Ala Ser Gln Ile Glu Ala Glu Lys Ser Ser Ser Met Ser Ser Leu	
1155 1160 1165 1170	
aat att gcg aag cac atg ccc cat cga gcc tac tgg gca gag cag cag	3609
Asn Ile Ala Lys His Met Pro His Arg Ala Tyr Trp Ala Glu Gln Gln	
1171 1176 1181 1186	
agc agg gtt gga ggg gct ggg gag act ggg cgt ttc ggt ggg ctg cca	3657
Ser Arg Val Gly Gly Ala Gly Glu Thr Gly Arg Phe Gly Gly Leu Pro	
1187 1192 1197 1202	
ctg ccc ctg atg gaa ctc atg gag aat gaa gct ctg gaa atc ctc acc	3705
Leu Pro Leu Met Glu Leu Met Glu Asn Glu Ala Leu Glu Ile Leu Thr	
1203 1208 1213 1218	
aaa gcc ctc cgg agt aag ctc ccc gcc aac ccc caa gaa ctc cca cga	3753
Lys Ala Leu Arg Ser Lys Leu Pro Ala Asn Pro Gln Glu Leu Pro Arg	
1219 1224 1229 1234	
cag att ctg gtg gat ttt gca ggg ctg ggg ccc agg ggg aga tgc aaa	3801
Gln Ile Leu Val Asp Phe Ala Gly Leu Gly Pro Arg Gly Arg Cys Lys	
1235 1240 1245 1250	
gtt ccc cag gct aac aca gac ctg agt gcc ctg cgc tac tgc tac ctc	3849
Val Pro Gln Ala Asn Thr Asp Leu Ser Ala Leu Arg Tyr Cys Tyr Leu	
1251 1256 1261 1266	
gaa tca tct gcg gtt cct cga atc aca cat gcg gcg ccc cct ggc tac	3897
Glu Ser Ser Ala Val Pro Arg Ile Thr His Ala Ala Pro Pro Gly Tyr	
1267 1272 1277 1282	
cag tta ggg atc ggc agg gac cac ttc ctg act aag gag ctg cag cga	3945
Gln Leu Gly Ile Gly Arg Asp His Phe Leu Thr Lys Glu Leu Gln Arg	
1283 1288 1293 1298	
tac atc gaa ggg ctc aag aag cgc cgg agc aag agg ctg tac gtg aat	3993
Tyr Ile Glu Gly Leu Lys Lys Arg Arg Ser Lys Arg Leu Tyr Val Asn	
1299 1304 1309 1314	
taa	3996

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1315

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<213> Homo sapiens

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<222> (171)..(920)

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ctcccacgct cctgcccgtg tctcccacgt ccccaggtg cgcgccacc atg gcg 176
Met Ala
1
tcc agc gac gag gac ggc acc aac ggc ggc gcc tcg gag gcc ggc gag 224
Ser Ser Asp Glu Asp Gly Thr Asn Gly Gly Ala Ser Glu Ala Gly Glu
3 8 13 18
gac cgg gag gct ccc ggc aag cgg agg cgc ctg ggg ttc ttg gcc acc 272
Asp Arg Glu Ala Pro Gly Lys Arg Arg Arg Leu Gly Phe Leu Ala Thr
19 24 29 34
gcc tgg ctc acc ttc tac gac atc gcc atg acc gcg ggg tgg ttg gtt 320
Ala Trp Leu Thr Phe Tyr Asp Ile Ala Met Thr Ala Gly Trp Leu Val
35 40 45 50
cta gct att gcc atg gta cgt ttt tat atg gaa aaa gga aca cac aga 368
Leu Ala Ile Ala Met Val Arg Phe Tyr Met Glu Lys Gly Thr His Arg
51 56 61 66
ggc tta tat aaa agt att cag aag aca ctt aaa ttt ttc cag aca ttt 416
Gly Leu Tyr Lys Ser Ile Gln Lys Thr Leu Lys Phe Phe Gln Thr Phe
67 72 77 82
gcc ttg ctt gag ata gtt cac tgt tta att gga att gta cct act tct 464
Ala Leu Leu Glu Ile Val His Cys Leu Ile Gly Ile Val Pro Thr Ser
83 88 93 98
gtg att gtg act ggg gtc caa gtg agt tca aga atc ttt atg gtg tgg 512
Val Ile Val Thr Gly Val Gln Val Ser Ser Arg Ile Phe Met Val Trp
99 104 109 114
ctc att act cac agt ata aaa cca atc cag aat gaa gag agt gtg gtg 560
Leu Ile Thr His Ser Ile Lys Pro Ile Gln Asn Glu Glu Ser Val Val
115 120 125 130

ctt ttt ctg gtc gcg tgg act gtg aca gag atc act cgc tat tcc ttc	608
Leu Phe Leu Val Ala Trp Thr Val Thr Glu Ile Thr Arg Tyr Ser Phe	
131 136 141 146	
tac aca ttc agc ctt ctt gac cac ttg cca tac ttc att aaa tgg gcc	656
Tyr Thr Phe Ser Leu Leu Asp His Leu Pro Tyr Phe Ile Lys Trp Ala	
147 152 157 162	
aga tat aat ttt ttt atc atc tta tat cct gtt gga gtt gct ggt gaa	704
Arg Tyr Asn Phe Phe Ile Ile Leu Tyr Pro Val Gly Val Ala Gly Glu	
163 168 173 178	
ctt ctt aca ata tac gct gcc ttg ccg tat gtg aag aaa aca gga atg	752
Leu Leu Thr Ile Tyr Ala Ala Leu Pro Tyr Val Lys Lys Thr Gly Met	
179 184 189 194	
ttt tca ata aga ctt cct aac aaa tac aat gtc tct ttt gac tac tat	800
Phe Ser Ile Arg Leu Pro Asn Lys Tyr Asn Val Ser Phe Asp Tyr Tyr	
195 200 205 210	
tat ttt ctt ctt ata acc atg gca tca tat ata cct ttg ttt cca caa	848
Tyr Phe Leu Leu Ile Thr Met Ala Ser Tyr Ile Pro Leu Phe Pro Gln	
211 216 221 226	
ctc tat ttt cat atg tta cgt caa aga aga aag gtg ctt cat gga gag	896
Leu Tyr Phe His Met Leu Arg Gln Arg Arg Lys Val Leu His Gly Glu	
227 232 237 242	
gtg att gta gaa aag gat gat taa atgatctctg caaacaagggt gctttttcca	950
Val Ile Val Glu Lys Asp Asp *	
243 248	
gaataaccaa gattacctga gtccaagttt taataacaag aataaacaac tttgtgaaat	1010
atcatggatt gtatggtttc ttaaaatata acttgagaca cgtgggtattt gccagtattt	1070
gtgttcctct tgtgccagat ctatttttta caagaactgt gcaaatatca gtaacttttg	1130
ggtaggtatt gattattagg aaaataatta ggtgtattat ctgggggaaa aaaaaacttt	1190
tgctaagttt tttttgaaac atgctcaaag ctttttaaat caatatttag aaattagttt	1250
aacgattttac tattatacct gctagtgata tttatgtgat atttataaat gaaaataaat	1310
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 <213> Homo sapiens

<220>
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 <222> (42)..(1031)

<400> 197

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ccg ggg tcg ggc ggc tgg gag gag gcc ccg cgc gca gct gcc gcg ctc		101
Pro Gly Ser Gly Gly Trp Glu Glu Ala Pro Arg Ala Ala Ala Ala Leu		
5 10 15 20		
tgc acc ctg tac cac gag gcc gga cag cgg ctg cgc cgc ctg cag gac		149
Cys Thr Leu Tyr His Glu Ala Gly Gln Arg Leu Arg Arg Leu Gln Asp		
21 26 31 36		
cag ctc gct gcc cgc gac gcc ctc atc gct cgc ctc cgc gcc cgc ctg		197
Gln Leu Ala Ala Arg Asp Ala Leu Ile Ala Arg Leu Arg Ala Arg Leu		
37 42 47 52		
gcc gcg ctg gag ggg gac gcc gcg ccg tcc cta gtg gac gcg ctg ctg		245
Ala Ala Leu Glu Gly Asp Ala Ala Pro Ser Leu Val Asp Ala Leu Leu		
53 58 63 68		
gag cag gtt gcg cgc ttc cgg gag cag ctg cga agg cag gag ggc ggc		293
Glu Gln Val Ala Arg Phe Arg Glu Gln Leu Arg Arg Gln Glu Gly Gly		
69 74 79 84		
gcc gcc gag gcc cag atg cgc cag gaa att gag agg ctg act gag cga		341
Ala Ala Glu Ala Gln Met Arg Gln Glu Ile Glu Arg Leu Thr Glu Arg		
85 90 95 100		
cta gaa gaa aaa gag agg gag atg cag cag ctg ctg agc cag ccc caa		389
Leu Glu Glu Lys Glu Arg Glu Met Gln Gln Leu Leu Ser Gln Pro Gln		
101 106 111 116		
cac gag cga gag aag gaa gtc gtc ctg cta cgg agg agc atg gca gaa		437
His Glu Arg Glu Lys Glu Val Val Leu Leu Arg Arg Ser Met Ala Glu		
117 122 127 132		
ggg gag cgc gcc cgg gcc gcc agt gac gtc ctg tgc cgc tcc ttg gcc		485
Gly Glu Arg Ala Arg Ala Ala Ser Asp Val Leu Cys Arg Ser Leu Ala		
133 138 143 148		
aac gag acc cat cag ctg cgg agg acg ctg acc gcc acc gcc cac atg		533
Asn Glu Thr His Gln Leu Arg Arg Thr Leu Thr Ala Thr Ala His Met		
149 154 159 164		
tgt cag cat ctg gcc aag tgt ctg gat gaa cga cag cat gca caa agg		581
Cys Gln His Leu Ala Lys Cys Leu Asp Glu Arg Gln His Ala Gln Arg		
165 170 175 180		
aat gtg ggg gag aga agt cct gac cag tcg gaa cac aca gat ggg cac		629
Asn Val Gly Glu Arg Ser Pro Asp Gln Ser Glu His Thr Asp Gly His		
181 186 191 196		
acc tct gtc cag agt gtt att gag aag ttg cag gaa gaa aat cga ctg		677
Thr Ser Val Gln Ser Val Ile Glu Lys Leu Gln Glu Glu Asn Arg Leu		
197 202 207 212		

tta aaa cag aag gtg act cac gtt gaa gac ctc aat gcc aag tgg cag	725
Leu Lys Gln Lys Val Thr His Val Glu Asp Leu Asn Ala Lys Trp Gln	
213 218/ 223 228	
cgc tac aac gcc agc agg gac gaa tac gtg agg ggg ctc cat gcg cag	773
Arg Tyr Asn Ala Ser Arg Asp Glu Tyr Val Arg Gly Leu His Ala Gln	
229 234 239 244	
ctc agg ggg ctg cag atc ccc cac gag ccc gag ctg atg agg aag gag	821
Leu Arg Gly Leu Gln Ile Pro His Glu Pro Glu Leu Met Arg Lys Glu	
245 250 255 260	
atc tcc cgg ctc aac aga cag ttg gaa gag aaa ata ^{ase} aat gac tgt gcc	869
Ile Ser Arg Leu Asn Arg Gln Leu Glu Glu Lys Ile Asn Asp Cys Ala	
261 266 271 276	
gaa gtg aag cag gag ctg gcg gcc tcc agg acg gcc cgg gat gct gcg	917
Glu Val Lys Gln Glu Leu Ala Ala Ser Arg Thr Ala Arg Asp Ala Ala	
277 282 287 292	
ttg gag cgg gtg cag atg ctg gaa cag cag gtg tct gtc cct cgg gct	965
Leu Glu Arg Val Gln Met Leu Glu Gln Gln Val Ser Val Pro Arg Ala	
293 298 303 308	
cgg gac ggc act gac cag atg tct gct ggc cgg tgg tgg ccg aaa tca	1013
Pro Asp Gly Thr Asp Gln Met Ser Ala Gly Arg Trp Trp Pro Lys Ser	
309 314 319 324	
tgg gac agg ctg ggc tga aggctt ggtggcactg agtgggcagt ggtcactgtg	1067
Trp Asp Arg Leu Gly *	
325 330	
gggggtgggag aagcctgggg gggcgcttcc tccttccttg agcagaaatg tgtgtctcgc	1127
ctctcttcag attctcgctt acaaggatga cttcatgtca gaaagggccg atcgggaacg	1187
ggctcaaagt aggattcaag aactggagga aaaggctgcc tctttgctgc accaggtgtc	1247
ctggagacag gattctcgag agccagacgc cggccggatt cacgctggga gcaaaaactgc	1307
caagtatttg gccgccgacg cattagagct tatggtgcct ggtggctgga ggcctgggac	1367
tgggtcccag cagccagaac ccctgcaga gggcgggcat cctggcgcgg ccagagagg	1427
ccagggggac cttcagtgcc ctactgcct gcagtgcttc agtgacgagc aaggggaaga	1487
gctcctcagg catgtggccg agtgctgcca gtgaccgaga ctcacccgtg cccttgcggc	1547
ctcctggccc ggtgcagctg ccctcagga caggggtgggt gctctcagat gccatggggt	1607
gagctctact gagagccaag gccctagaa tagttgcggg gcactctgat cgttcacttt	1667
ggtccctttg gctatggaac aggctgggtc acaggggaact gccagtgagg ctggaggctg	1727
gaggtggaga tggggtcagg aacatctggc agagggaggt ccagtcctgt gtctccatca	1787

ggcttaagcc agagctatct ggtgctggtg tgccagcccc tccccagcc tgcctagaaa 1847
 ggggtggctg cctgagggag tcacttgat ggtccccagg gtgggagccc catcctgttc 1907
 tatggaataa agcgtcgcct ctctgcctcg aaccagtcaa atggagtatt gcggctgcac 1967
 gtcacactag ggtggccacc cccgccattg cgagccacat gtctgcaactg agaaactgca 2027
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<220>
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 <222> (136) .. (498)

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 gcgcagcacc tcacc atg gac tgc acc tgg agg atc ctc ttc ttg gtg gca 171
 Met Asp Cys Thr Trp Arg Ile Leu Phe Leu Val Ala
 1 5 10
 gca gct aca ggc acc cac gcc cag gtc cag ctg gta cag tct ggg gct 219
 Ala Ala Thr Gly Thr His Ala Gln Val Gln Leu Val Gln Ser Gly Ala
 13 18 23 28
 gag gtg aag aag cct ggg gcc tca gtg aag gtc tcc tgc aag gtt tcc 267
 Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Val Ser
 29 34 39 44
 gga tac acc ctc act gaa tta tcc atg cac tgg gtg cga cag gct cct 315
 Gly Tyr Thr Leu Thr Glu Leu Ser Met His Trp Val Arg Gln Ala Pro
 45 50 55 60
 gga aaa ggg ctt gag tgg atg gga gct ttt gat cct gaa gat ggt gaa 363
 Gly Lys Gly Leu Glu Trp Met Gly Ala Phe Asp Pro Glu Asp Gly Glu
 61 66 71 76
 aca atc tac gca cag aag ttc cag ggc aga gtc acc atg acc gag gac 411
 Thr Ile Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp
 77 82 87 92
 aca tct aca gac aca ggc tac atg ggg ctg agc agc ctg aga tct gag 459
 Thr Ser Thr Asp Thr Gly Tyr Met Gly Leu Ser Ser Leu Arg Ser Glu
 93 98 103 108

gac acg gcc gtg tat tat tgt gca aca gac aca gtg tga aaacccacat 508
 Asp Thr Ala Val Tyr Tyr Cys Ala Thr Asp Thr Val *
 109 114 119

cctgagagcgcg tcagaaaccc tgaggaatga ggcagctgtg ctgaggctga ggagatgaca 568

ggatttatga agtttaaadc tgtttagaaa atgggttgag taattgagta aaacagcaat 628

ggaaaaaac gaaatcgcca cagcgaagtc gacccgggaa 668

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (201)..(2105)

<400> 199
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ggcgaccgct ggtgtcaaac atcttagctc aaatatctgg gaacgattgc gcgctgagga 120

agaccctttg ggacttgtag ctccactccg gggaacggac tcgccgggac tgacagttgc 180

cggaagtgcg gctgcgggga atg gcc gcc gct gcg acc atg gcg gct gcg 230
 Met Ala Ala Ala Thr Met Ala Ala Ala
 1 5

gcc cgg gaa ctg gtg ttg cgg gct ggg acc tca gat atg gag gag gaa 278
 Ala Arg Glu Leu Val Leu Arg Ala Gly Thr Ser Asp Met Glu Glu Glu
 11 16 21 26

gag ggc ccg ctg gcg ggt ggt cct ggg ctc cag gaa cca ctg caa ctt 326
 Glu Gly Pro Leu Ala Gly Gly Pro Gly Leu Gln Glu Pro Leu Gln Leu
 27 32 37 42

ggg gag ttg gat atc act tct gat gaa ttc atc ctg gat gaa gtg gat 374
 Gly Glu Leu Asp Ile Thr Ser Asp Glu Phe Ile Leu Asp Glu Val Asp
 43 48 53 58

gtt cac att cag gca aat ctg gag gat gag tta gta aag gaa gct ctt 422
 Val His Ile Gln Ala Asn Leu Glu Asp Glu Leu Val Lys Glu Ala Leu
 59 64 69 74

aaa acg ggt gta gat ctc cgt cac tat tca aag caa gtt gag ctg gag 470
 Lys Thr Gly Val Asp Leu Arg His Tyr Ser Lys Gln Val Glu Leu Glu
 75 80 85 90

cta cag cag att gaa cag aaa tcc att cgg gat tat att caa gag agt 518
 Leu Gln Gln Ile Glu Gln Lys Ser Ile Arg Asp Tyr Ile Gln Glu Ser
 91 96 101 106

gag aat ata gca tct cta cac aac cag atc aca gcc tgt gat gct gtc	566
Glu Asn Ile Ala Ser Leu His Asn Gln Ile Thr Ala Cys Asp Ala Val	
107 112 117 122	
ctg gag cga atg gag cag atg ttg gga gct ttt cag agt gac ctc agc	614
Leu Glu Arg Met Glu Gln Met Leu Gly Ala Phe Gln Ser Asp Leu Ser	
123 128 133 138	
tcc atc agc tct gag atc cgg aca ctg cag gaa cag tca gga gcc atg	662
Ser Ile Ser Ser Glu Ile Arg Thr Leu Gln Glu Gln Ser Gly Ala Met	
139 144 149 154	
aac att cga ctt cga aat cgc cag gca gtt cgg ggg aaa ctt ggg gag	710
Asn Ile Arg Leu Arg Asn Arg Gln Ala Val Arg Gly Lys Leu Gly Glu	
155 160 165 170	
ctt gtt gat ggt ctg gtg gtg cct tct gct ctg gtc acg gca att ctg	758
Leu Val Asp Gly Leu Val Val Pro Ser Ala Leu Val Thr Ala Ile Leu	
171 176 181 186	
gag gct cca gtg aca gag ccc agg ttc ttg gag cag cta cag gag ctg	806
Glu Ala Pro Val Thr Glu Pro Arg Phe Leu Glu Gln Leu Gln Glu Leu	
187 192 197 202	
gat gcc aag gca gcc gca gtc aga gag cag gaa gct aga ggc aca gca	854
Asp Ala Lys Ala Ala Ala Val Arg Glu Gln Glu Ala Arg Gly Thr Ala	
203 208 213 218	
gcc tgc gca gat gtc aga ggc gtg ctc gat cgg ctc cgg gtc aag gca	902
Ala Cys Ala Asp Val Arg Gly Val Leu Asp Arg Leu Arg Val Lys Ala	
219 224 229 234	
gtg acg aag atc cga gag ttt atc ctc cag aag att tat tcc ttc agg	950
Val Thr Lys Ile Arg Glu Phe Ile Leu Gln Lys Ile Tyr Ser Phe Arg	
235 240 245 250	
aaa ccc atg acc aac tat cag atc ccc cag acg gcc ctg ctg aag tac	998
Lys Pro Met Thr Asn Tyr Gln Ile Pro Gln Thr Ala Leu Leu Lys Tyr	
251 256 261 266	
agg ttc ttc tat cag ttt ctg ctg ggc aat gaa cga gca aca gca aag	1046
Arg Phe Phe Tyr Gln Phe Leu Leu Gly Asn Glu Arg Ala Thr Ala Lys	
267 272 277 282	
gag atc agg gat gaa tat gtg gag acg ctg agc aag att tac ctg tct	1094
Glu Ile Arg Asp Glu Tyr Val Glu Thr Leu Ser Lys Ile Tyr Leu Ser	
283 288 293 298	
tac tac cgc tct tac ctg ggg cgg ctc atg aag gtg cag tat gag gaa	1142
Tyr Tyr Arg Ser Tyr Leu Gly Arg Leu Met Lys Val Gln Tyr Glu Glu	
299 304 309 314	
gtc gct gag aaa gat gat cta atg ggt gtg gaa gat aca gca aag aaa	1190
Val Ala Glu Lys Asp Asp Leu Met Gly Val Glu Asp Thr Ala Lys Lys	
315 320 325 330	
gga ttc ttc tca aag cca tcg ctc cgc agc agg aac acc att ttc acc	1238

Gly Phe Phe Ser Lys Pro Ser Leu Arg Ser Arg Asn Thr Ile Phe Thr 331 336 341 346	
cta gga acc cgc ggc tct gtc atc tcc ccc act gaa ctt gag gcc ccc Leu Gly Thr Arg Gly Ser Val Ile Ser Pro Thr Glu Leu Glu Ala Pro 347 352 357 362	1286
atc ctg gtg cct cac aca gcg cag cgc gga gag cag agg tat cca ttt Ile Leu Val Pro His Thr Ala Gln Arg Gly Glu Gln Arg Tyr Pro Phe 363 368 373 378	1334
gag gcc ctc ttc cgc agc cag cac tac gcc ctc cta gac aat tcc tgc Glu Ala Leu Phe Arg Ser Gln His Tyr Ala Leu Leu Asp Asn Ser Cys 379 384 389 394	1382
cgc gaa tac ctt ttc atc tgt gaa ttt ttt gtt gtg tct ggc cca gct Arg Glu Tyr Leu Phe Ile Cys Glu Phe Phe Val Val Ser Gly Pro Ala 395 400 405 410	1430
gca cac gac ctg ttc cat gct gtc atg ggc cgt aca ctc agc atg acc Ala His Asp Leu Phe His Ala Val Met Gly Arg Thr Leu Ser Met Thr 411 416 421 426	1478
ctg aaa cac ctg gat tct tat cta gct gac tgc tac gat gcc att gct Leu Lys His Leu Asp Ser Tyr Leu Ala Asp Cys Tyr Asp Ala Ile Ala 427 432 437 442	1526
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Arg Ile Leu Asp Ser Leu His Tyr Phe Tyr Trp Leu Ala Ser Val Val				
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Thr Thr Leu Gly Ser Tyr Glu Ala Ser Glu Gly Cys Glu Arg Lys Lys				
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Leu Gly Leu Ser Asp Tyr Ser Gly Leu Gln Glu Glu Leu Gln Glu Leu	
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Cys Leu Met Glu *				/
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Ala Thr Ala Lys Arg Ser Gly Ala Val Phe Val Val Phe Val Ala Gly	
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Val Thr Glu Ala Ser Ser Asn Ser Phe Val Ala Ile Lys Ile Asp Thr	
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Lys Ser Glu Ala Cys Leu Gln Phe Ser Gln Ile Tyr Pro Val Val Cys	
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Val Pro Ser Ser Phe Phe Ile Gly Asp Ser Gly Ile Pro Leu Glu Val	
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Ile Ala Gly Ser Val Ser Ala Asp Glu Leu Val Thr Arg Ile His Lys	
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Val Arg Gln Met His Leu Leu Lys Ser Glu Thr Ser Val Ala Asn Gly	
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Lys Gln Gln Ile Ala Leu Asp Arg Ala Glu Arg Ala Ala Arg Phe Ala	
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Met Ser Gly Gly Arg Gly Arg Arg Ser Arg Leu Ser Arg Ser Trp
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cca acg ggg ccc tca aag tct ccg tct gga gta agg tgc tgc gga cga 274
Pro Thr Gly Pro Ser Lys Ser Pro Ser Gly Val Arg Cys Cys Gly Arg
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Arg Ala Trp Glu Asp Lys Asp Glu Phe Leu Asp Val Ile Tyr Trp Phe
32 37 42 47
cga cag atc att gct gtg gtc ctg ggt gtc att tgg gga gtt ttg cca 370
Arg Gln Ile Ile Ala Val Val Leu Gly Val Ile Trp Gly Val Leu Pro
48 53 58 63
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gtc ctg tac ctc tac ttc agc aat tac cta cag att gat gag gaa gaa 466
Val Leu Tyr Leu Tyr Phe Ser Asn Tyr Leu Gln Ile Asp Glu Glu Glu
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tat ggt ggc acg tgg gag ctc acg aag gaa ggg ttt atg acc tct ttt 514

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Gly	Thr	Val	Gly	Met	Pro	Gly	Leu	Thr	Ala	Tyr	Phe	Gly	Leu	Leu	Glu		
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Met Arg Pro Arg Gly Leu Pro Pro Leu Leu	
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Val Val Leu Leu Gly Cys Trp Ala Ser Val Ser Ala Gln Thr Asp Ala	
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acc ccg gcg gtg acg aca gag ggc ctc aac tcc acc gag gca gcc ctg	267
Thr Pro Ala Val Thr Thr Glu Gly Leu Asn Ser Thr Glu Ala Ala Leu	
27 32 37 42	
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Ala Thr Phe Gly Thr Phe Pro Ser Thr Arg Pro Pro Gly Thr Pro Arg	
43 48 53 58	
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Ala Val Leu Cys Val Cys Asp Leu Ser Pro Ala Gln Cys Asp Ile Asn	
75 80 85 90	
tgc tgc tgt gat ccc gac tgc agc tcc gtg gat ttc agt gtc ttt tct	459
Cys Cys Cys Asp Pro Asp Cys Ser Ser Val Asp Phe Ser Val Phe Ser	
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gcc tgc tca gtt cca gtt gtc acg ggc gac agc cag ttt tgt agt caa	507
Ala Cys Ser Val Pro Val Val Thr Gly Asp Ser Gln Phe Cys Ser Gln	
107 112 117 122	
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Lys Ala Val Ile Tyr Ser Leu Asn Phe Thr Ala Asn Pro Pro Gln Arg	
123 128 133 138	
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Val Phe Glu Leu Val Asp Gln Ile Asn Pro Ser Ile Phe Cys Ile His	
139 144 149 154	
att aca aac tat aaa cct gca tta tcc ttt att aat cca gaa gta cct	651
Ile Thr Asn Tyr Lys Pro Ala Leu Ser Phe Ile Asn Pro Glu Val Pro	
155 160 165 170	
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Asp Glu Asn Asn Phe Asp Thr Leu Met Lys Thr Ser Asp Gly Phe Thr	
171 176 181 186	
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Phe Leu Arg Phe Pro Ser Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn	
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Asn Pro Ala Ala Phe Leu Val Asn Gln Ala Val Lys Cys Thr Arg Lys	
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Ile Asn Leu Glu Gln Cys Glu Glu Ile Glu Ala Leu Ser Met Ala Phe	
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Tyr Ser Ser Pro Glu Ile Leu Arg Val Pro Asp Ser Arg Lys Lys Val	
267 272 277 282	
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Pro Ile Thr Val Gln Ser Ile Val Ile Gln Ser Leu Asn Lys Thr Leu	
283 288 293 298	
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Thr Arg Arg Glu Asp Thr Asp Val Leu Gln Pro Thr Leu Val Asn Ala	
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Gly His Phe Ser Leu Cys Val Asn Val Val Leu Glu Val Lys Tyr Ser	
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Leu Thr Tyr Thr Asp Ala Gly Glu Val Thr Lys Ala Asp Leu Ser Phe	
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Val Leu Gly Thr Val Ser Ser Val Val Val Pro Leu Gln Gln Lys Phe	
347 352 357 362	
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Glu Ile His Phe Leu Gln Glu Asn Thr Gln Pro Val Pro Leu Ser Gly	
363 368 373 378	
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Asn Pro Gly Tyr Val Val Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro	
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His Lys Gly Gly Ala Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys	
395 400 405 410	
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Ser Leu Leu Trp Gly Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly	
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Asn Ser Gln Ala Gln Asp Met Leu Asp Trp Val Pro Ile His Phe Ile	
427 432 437 442	
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Thr Gln Ser Phe Asn Arg Lys Asp Ser Cys Gln Leu Pro Gly Ala Leu	
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Val Ile Glu Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln	
459 464 469 474	
gcc aaa ata gtc aat gta act gca aat cta att tca tcc tcc ttt cct	1611
Ala Lys Ile Val Asn Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro	
475 480 485 490	
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Glu Ala Asn Ser Gly Asn Glu Arg Thr Ile Leu Ile Ser Thr Ala Val	
491 496 501 506	
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Thr Phe Val Asp Val Ser Ala Pro Ala Glu Ala Gly Phe Arg Ala Pro	
507 512 517 522	
cca gcc atc aat gcc agg ctg ccc ttt aac ttc ttc ttc ccg ttt gtt	1755
Pro Ala Ile Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val	
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gtc cga atc att gat aca cct caa ttt caa cgt ctt cga tac atc aaa	845
Val Arg Ile Ile Asp Thr Pro Gln Phe Gln Arg Leu Arg Tyr Ile Lys	
133 138 143 148	
cag ctg gga ggt ggt tac tat gtt ttt cca gga gct tca cac aat cga	893
Gln Leu Gly Gly Gly Tyr Tyr Val Phe Pro Gly Ala Ser His Asn Arg	
149 154 159 164	
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Phe Glu His Ser Leu Gly Val Gly Tyr Leu Ala Gly Cys Leu Val His	
165 170 175 180	
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213 218 223 228	
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229 234 239 244	
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245 250 255 260	
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Pro Glu Glu Asp Ile Cys Phe Ile Lys Glu Gln Ile Val Gly Pro Leu	
261 266 271 276	
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Glu Ser Pro Val Glu Asp Ser Leu Trp Pro Tyr Lys Gly Arg Pro Glu	
277 282 287 292	
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Asn Lys Ser Phe Leu Tyr Glu Ile Val Ser Asn Lys Arg Asn Gly Ile	
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Asp Val Asp Lys Trp Asp Tyr Phe Ala Arg Asp Cys His His Leu Gly	
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Pro	Lys	Val	Leu	Leu	Asp	Val	Lys	Leu	Lys	Ala	Glu	Asp	Phe	Ile	Val		
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597	602	607	612	
gca tcc aaa agc aga gtc cag ctt ttt aaa	gat gac cca atg tga atg	2285		
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Met Thr Ser Ile Arg Gln Phe Val	
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cag aag ttc aag atg aag aag att cct ctc cat gtc ctg atc aac aat	821
Gln Lys Phe Lys Met Lys Lys Ile Pro Leu His Val Leu Ile Asn Asn	
9 14 19 24	
gct ggg gtg atg atg gtc cct cag agg aaa acc aga gat gga ttc gaa	869
Ala Gly Val Met Met Val Pro Gln Arg Lys Thr Arg Asp Gly Phe Glu	
25 30 35 40	
gaa cat ttc ggc ctg aac tac cta ggg cac ttc ctg ctg acc aac ctt	917
Glu His Phe Gly Leu Asn Tyr Leu Gly His Phe Leu Leu Thr Asn Leu	
41 46 51 56	
ctc ttg gat acg ctg aaa gag tct ggg tcc cct ggc cac agt gcg agg	965
Leu Leu Asp Thr Leu Lys Glu Ser Gly Ser Pro Gly His Ser Ala Arg	
57 62 67 72	
gtg gtc acc gtc tcc tct gcc acc cat tac gtc gct gag ctg aac atg	1013
Val Val Thr Val Ser Ser Ala Thr His Tyr Val Ala Glu Leu Asn Met	
73 78 83 88	
gat gac ctt cag agc agt gcc tgc tac tca ccc cac gca gcc tac gcc	1061
Asp Asp Leu Gln Ser Ser Ala Cys Tyr Ser Pro His Ala Ala Tyr Ala	
89 94 99 104	
cag agc aag ctg gcc ctt gtc ctg ttc acc tac cac ctc cag cgg ctg	1109
Gln Ser Lys Leu Ala Leu Val Leu Phe Thr Tyr His Leu Gln Arg Leu	
105 110 115 120	
ctg gcg gct gag gga agc cac gtg acc gcc aac gtg gtg gac ccc ggg	1157
Leu Ala Ala Glu Gly Ser His Val Thr Ala Asn Val Val Asp Pro Gly	
121 126 131 136	
gtg gtc aac acg gac gtc tac aag cac gtg ttc tgg gcc acc cgt ctg	1205
Val Val Asn Thr Asp Val Tyr Lys His Val Phe Trp Ala Thr Arg Leu	
137 142 147 152	

gcg aag aag ctt ctc ggc tgg ttg ctt ttc aag acc ccc gat gaa gga	1253
Ala Lys Lys Leu Leu Gly Trp Leu Leu Phe Lys Thr Pro Asp Glu Gly	
153 158 163 168	
gcg tgg act tcc atc tac gca gca gtc acc cca gag ctg gaa gga gtt	1301
Ala Trp Thr Ser Ile Tyr Ala Ala Val Thr Pro Glu Leu Glu Gly Val	
169 174 179 184	
ggt ggc cat tac cta tac aac aag aaa gag acc aag tcc ctc cac gtc	1349
Gly Gly His Tyr Leu Tyr Asn Lys Lys Glu Thr Lys Ser Leu His Val	
185 190 195 200	
acc tac aac cag aaa ctg cag cag cag ctg tgg tct aag agt tgt gag	1397
Thr Tyr Asn Gln Lys Leu Gln Gln Gln Leu Trp Ser Lys Ser Cys Glu	
201 206 211 216	
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Met Thr Gly Val Leu Asp Val Thr Leu *	
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ttgagtttct cacaccacc tgccacagg gctctgtcct ctagttttga gagagctgcc	1568
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ggtcttcaac cataaacttt gtgattccaa agtgcccagt tgtcacagggt gccataaata	1688
attacatttt ccaacataaa tgtgccattt tccttgccgc gttaatacaa ctgagtacaa	1748
aagttccaag agagatgtct tcttttcagg ggctgcaatg tcctctctga gacctagtgg	1808
tggatgaggt ctctgtttg attttgttcc tgcactcact catttttcca gagaccagc	1868
tgtgattcac aggtgtcaga catggggagg tgtgagcctt gcttgctaca gcctgtagga	1928
tgagtttgac gtggccagca gcaccatctg gtcaacctca ttccagaatg gcacagtcac	1988
aagtgaagca tgccactgtc aaatccgaga atgtaaaccg ctgaacagct atggatcaaa	2048
tggtagccct caaaagatat gttcatgcc taacctcag aacctataaa tattacttta	2108
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cccagtgaac ctaatgccat tcacgagggt tcttatncag aggacaggta gaggggagat	2228
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tggccaccac aggccaggca tg	2310

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gtctccagtc cgggaccgaa gccgcctgcc gtagcgggcg gccagatccg cgtcccgct	180
cagcggccgg aggacatgcg ggagagaga atg agc cag agg gac acg ctg gtg	233
Met Ser Gln Arg Asp Thr Leu Val	
1 5	
cat ctg ttt gcc gga gga tgt ggt ggt aca gtg gga gct att ctg aca	281
His Leu Phe Ala Gly Gly Cys Gly Gly Thr Val Gly Ala Ile Leu Thr	
9 14 19 24	
tgt cca ctg gaa gtt gta aaa aca cga ctg cag tca tct tct gtg acg	329
Cys Pro Leu Glu Val Val Lys Thr Arg Leu Gln Ser Ser Ser Val Thr	
25 30 35 40	
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Leu Tyr Ile Ser Glu Val Gln Leu Asn Thr Met Ala Gly Ala Ser Val	
41 46 51 56	
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Asn Arg Val Val Ser Pro Gly Pro Leu His Cys Leu Lys Val Ile Leu	
57 62 67 72	
gaa aaa gaa ggg cct cgt tcc ttg ttt aga gga cta ggc ccc aat tta	473
Glu Lys Glu Gly Pro Arg Ser Leu Phe Arg Gly Leu Gly Pro Asn Leu	
73 78 83 88	
gtg ggg gta gcc cct tcc aga gca ata tac ttt gct gct tat tca aac	521
Val Gly Val Ala Pro Ser Arg Ala Ile Tyr Phe Ala Ala Tyr Ser Asn	
89 94 99 104	
tgc aag gaa aag ttg aat gat gta ttt gat cct gat tct acc caa gta	569
Cys Lys Glu Lys Leu Asn Asp Val Phe Asp Pro Asp Ser Thr Gln Val	
105 110 115 120	
cat atg att tca gct gca atg gca ggt ttt act gca atc aca gca acc	617
His Met Ile Ser Ala Ala Met Ala Gly Phe Thr Ala Ile Thr Ala Thr	
121 126 131 136	
aac ccc att tgg ctt ata aag act cgg tta cag ctt gat gca agg aac	665
Asn Pro Ile Trp Leu Ile Lys Thr Arg Leu Gln Leu Asp Ala Arg Asn	
137 142 147 152	
cgc ggg gaa agg cga atg ggt gct ttt gaa tgt gtt cgt aaa gtg tat	713
Arg Gly Glu Arg Arg Met Gly Ala Phe Glu Cys Val Arg Lys Val Tyr	
153 158 163 168	
cag aca gat gga cta aaa gga ttt tat agg ggc atg tct gct tca tat	761

Gln Thr Asp Gly Leu Lys Gly Phe Tyr Arg Gly Met Ser Ala Ser Tyr	
169 174 179 184	
gct ggt ata tca gag act gtt atc cat ttt gtt att tat gaa agt ata	809
Ala Gly Ile Ser Glu Thr Val Ile His Phe Val Ile Tyr Glu Ser Ile	
185 190 195 200	
aaa caa aaa cta ctg gaa tat aag act gct tct aca atg gaa aat gat	857
Lys Gln Lys Leu Leu Glu Tyr Lys Thr Ala Ser Thr Met Glu Asn Asp	
201 206 211 216	
gaa gag tct gtg aaa gaa gca tca gat ttt gtg gga atg atg cta gct	905
Glu Glu Ser Val Lys Glu Ala Ser Asp Phe Val Gly Met Met Leu Ala	
217 222 227 232	
gct gcc acc tca aaa act tgt gcc aca act ata gca tat cca cat gaa	953
Ala Ala Thr Ser Lys Thr Cys Ala Thr Thr Ile Ala Tyr Pro His Glu	
233 238 243 248	
ggt gta aga aca aga cta cgt gaa gag gga aca aaa tac aga tct ttt	1001
Val Val Arg Thr Arg Leu Arg Glu Glu Gly Thr Lys Tyr Arg Ser Phe	
249 254 259 264	
ttt cag act cta tct ttg ctt gtt caa gaa gaa ggt tat ggg tct ctt	1049
Phe Gln Thr Leu Ser Leu Leu Val Gln Glu Glu Gly Tyr Gly Ser Leu	
265 270 275 280	
tat cgt ggt ctg aca act cat cta gtg aga cag att cca aac aca gcc	1097
Tyr Arg Gly Leu Thr Thr His Leu Val Arg Gln Ile Pro Asn Thr Ala	
281 286 291 296	
att atg atg gcc acc tat gaa ttg gtg gtt tac cta ctc aat gga tag	1145
Ile Met Met Ala Thr Tyr Glu Leu Val Val Tyr Leu Leu Asn Gly *	
297 302 307 312	
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atacagaagc cagcatggca gacagaagaa aaatagtttg ggaacatgta actattctaa	1265
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gtctccagtc cgggaccgaa gccgcctgcc gtagcgggcg gccagatccg cgtccccgct	180
cagcggccgg aggacatgcg ggagagaga atg agc cag agg gac acg ctg gtg Met Ser Gln Arg Asp Thr Leu Val	233
1 5	
cat ctg ttt gcc gga gga tgt ggt ggt aca gtg gga gct att ctg aca His Leu Phe Ala Gly Gly Cys Gly Gly Thr Val Gly Ala Ile Leu Thr	281
9 14 19 24	
tgt cca ctg gaa gtt gta aaa aca cga ctg cag tca tct tct gtg acg Cys Pro Leu Glu Val Val Lys Thr Arg Leu Gln Ser Ser Ser Val Thr	329
25 30 35 40	
ctt tat att tct gaa gtt cag ctg aac acc atg gct gga gcc agt gtc Leu Tyr Ile Ser Glu Val Gln Leu Asn Thr Met Ala Gly Ala Ser Val	377
41 46 51 56	
aac cga gta gtg tct ccc gga cct ctt cat tgc cta aaa gca ata tac Asn Arg Val Val Ser Pro Gly Pro Leu His Cys Leu Lys Ala Ile Tyr	425
57 62 67 72	
ttt gct gct tat tca aac tgc aag gaa aag ttg aat gat gta ttt gat Phe Ala Ala Tyr Ser Asn Cys Lys Glu Lys Leu Asn Asp Val Phe Asp	473
73 78 83 88	
cct gat tct acc caa gta cat atg att tca gct gca atg gca ggt ttt Pro Asp Ser Thr Gln Val His Met Ile Ser Ala Ala Met Ala Gly Phe	521
89 94 99 104	
act gca atc aca gca acc aac ccc att tgg ctt ata aag act cgg tta Thr Ala Ile Thr Ala Thr Asn Pro Ile Trp Leu Ile Lys Thr Arg Leu	569
105 110 115 120	
cag ctt gat gca agg aac cgc ggg gaa agg cga atg ggt gct ttt gaa Gln Leu Asp Ala Arg Asn Arg Gly Glu Arg Arg Met Gly Ala Phe Glu	617
121 126 131 136	
tgt gtt cgt aaa gtg tat cag aca gat gga cta aaa gga ttt tat agg Cys Val Arg Lys Val Tyr Gln Thr Asp Gly Leu Lys Gly Phe Tyr Arg	665
137 142 147 152	
ggc atg tct gct tca tat gct ggt ata tca gag act gtt atc cat ttt Gly Met Ser Ala Ser Tyr Ala Gly Ile Ser Glu Thr Val Ile His Phe	713
153 158 163 168	
gtt att tat gaa agt ata aaa caa aaa cta ctg gaa tat aag act gct Val Ile Tyr Glu Ser Ile Lys Gln Lys Leu Leu Glu Tyr Lys Thr Ala	761
169 174 179 184	
tct aca atg gaa aat gat gaa gag tct gtg aaa gaa gca tca gat ttt Ser Thr Met Glu Asn Asp Glu Glu Ser Val Lys Glu Ala Ser Asp Phe	809
185 190 195 200	

gtg gga atg atg cta gct gct gcc acc tca aaa act tgt gcc aca act	857
Val Gly Met Met Leu Ala Ala Ala Thr Ser Lys Thr Cys Ala Thr Thr	
201 206 211 216	

ata gca tat cca cat gaa gtt gta aga aca aga cta cgt gaa gag gga	905
Ile Ala Tyr Pro His Glu Val Val Arg Thr Arg Leu Arg Glu Glu Gly	
217 222 227 232	

aca aaa tac aga tct ttt ttt cag act cta tct ttg ctt gtt caa gaa	953
Thr Lys Tyr Arg Ser Phe Phe Gln Thr Leu Ser Leu Leu Val Gln Glu	
233 238 243 248	

gaa ggt tat ggg tct ctt tat cgt ggt ctg aca act cat cta gtg aga	1001
Glu Gly Tyr Gly Ser Leu Tyr Arg Gly Leu Thr Thr His Leu Val Arg	
249 254 259 264	

cag att cca aac aca gcc att atg atg gcc acc tat gaa ttg gtg gtt	1049
Gln Ile Pro Asn Thr Ala Ile Met Met Ala Thr Tyr Glu Leu Val Val	
265 270 275 280	

tac cta ctc aat gga tag cagcac gaggactgct gtactgcaaa aaaagaagac	1103
Tyr Leu Leu Asn Gly *	
281 286	

caaaagatta cagtggacca tgggatacag aagccagcat ggcagacaga agaaaaatag	1163
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tttggaaca tgtaactatt ctaagtggaa gttttgttgt aggaattata gtaatcacac	1223
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Met Gln Arg Leu	
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cag gta gtg ctg ggc cac ctg agg ggt ccg gcc gat tcc ggc tgg atg	161
Gln Val Val Leu Gly His Leu Arg Gly Pro Ala Asp Ser Gly Trp Met	
5 10 15 20	

ccg cag gcc gcg cct tgc ctg agc ggt gcc ccg cag gcc tcg gcc gcg	209
Pro Gln Ala Ala Pro Cys Leu Ser Gly Ala Pro Gln Ala Ser Ala Ala	
21 26 31 36	

gat	gtg	gtg	gtg	gtg	cac	ggg	cgg	cgc	acg	gcc	atc	tgc	cgg	gcg	ggc	257
Asp	Val	Val	Val	Val	His	Gly	Arg	Arg	Thr	Ala	Ile	Cys	Arg	Ala	Gly	
37					42					47					52	
/																
cgc	ggc	ggc	ttc	aag	gac	acc	acc	ccc	gac	gag	ctt	ctc	tcg	gca	gtc	305
Arg	Gly	Gly	Phe	Lys	Asp	Thr	Thr	Pro	Asp	Glu	Leu	Leu	Ser	Ala	Val	
53					58					63					68	
atg	acc	gcg	gtt	ctc	aag	gac	gtg	aat	ctg	agg	ccg	gaa	cag	ctg	ggg	353
Met	Thr	Ala	Val	Leu	Lys	Asp	Val	Asn	Leu	Arg	Pro	Glu	Gln	Leu	Gly	
69					74					79					84	
gac	atc	tgt	gtc	gga	aat	gtg	ctg	cag	cct	ggg	gcc	ggg	gca	atc	atg	401
Asp	Ile	Cys	Val	Gly	Asn	Val	Leu	Gln	Pro	Gly	Ala	Gly	Ala	Ile	Met	
85					90					95					100	
gcc	cga	atc	gcc	cag	ttt	ctg	agt	gac	atc	ccg	gag	act	gtg	cct	ttg	449
Ala	Arg	Ile	Ala	Gln	Phe	Leu	Ser	Asp	Ile	Pro	Glu	Thr	Val	Pro	Leu	
101					106					111					116	
tcc	act	gtc	aat	aga	cag	tgt	tcg	tcg	ggg	cta	cag	gca	gtg	gcc	agc	497
Ser	Thr	Val	Asn	Arg	Gln	Cys	Ser	Ser	Gly	Leu	Gln	Ala	Val	Ala	Ser	
117					122					127					132	
ata	gca	ggg	ggc	atc	aga	aat	ggg	tct	tat	gac	att	ggc	atg	gcc	tgt	545
Ile	Ala	Gly	Gly	Ile	Arg	Asn	Gly	Ser	Tyr	Asp	Ile	Gly	Met	Ala	Cys	
133					138					143					148	
ggg	gtg	gag	tcc	atg	tcc	ctg	gct	gac	aga	ggg	aac	cct	gga	aat	att	593
Gly	Val	Glu	Ser	Met	Ser	Leu	Ala	Asp	Arg	Gly	Asn	Pro	Gly	Asn	Ile	
149					154					159					164	
act	tcg	cgc	ttg	atg	gag	aag	gag	aag	gcc	aga	gat	tgc	ctg	att	cct	641
Thr	Ser	Arg	Leu	Met	Glu	Lys	Glu	Lys	Ala	Arg	Asp	Cys	Leu	Ile	Pro	
165					170					175					180	
atg	ggg	ata	acc	tct	gag	aat	gtg	gct	gag	cgg	ttt	ggc	att	tca	cgg	689
Met	Gly	Ile	Thr	Ser	Glu	Asn	Val	Ala	Glu	Arg	Phe	Gly	Ile	Ser	Arg	
181					186					191					196	
gag	aag	cag	gat	acc	ttt	gcc	ctg	gct	tcc	cag	cag	aag	gca	gca	aga	737
Glu	Lys	Gln	Asp	Thr	Phe	Ala	Leu	Ala	Ser	Gln	Gln	Lys	Ala	Ala	Arg	
197					202					207					212	
gcc	cag	agc	aag	ggc	tgt	ttc	caa	gct	gag	att	gtg	cct	gtg	acc	acc	785
Ala	Gln	Ser	Lys	Gly	Cys	Phe	Gln	Ala	Glu	Ile	Val	Pro	Val	Thr	Thr	
213					218					223					228	
acg	gtc	cat	gat	gac	aag	ggc	acc	aag	agg	agc	atc	act	gtg	acc	cag	833
Thr	Val	His	Asp	Asp	Lys	Gly	Thr	Lys	Arg	Ser	Ile	Thr	Val	Thr	Gln	
229					234					239					244	
gat	gag	ggg	atc	cgc	ccc	agc	acc	acc	atg	gag	ggc	ctg	gcc	aaa	ctg	881
Asp	Glu	Gly	Ile	Arg	Pro	Ser	Thr	Thr	Met	Glu	Gly	Leu	Ala	Lys	Leu	
245					250					255					260	
aag	cct	gcc	ttc	aag	aaa	gat	ggg	tct	acc	aca	gct	gga	aac	tct	agc	929

Lys Pro Ala Phe Lys Lys Asp Gly Ser Thr Thr Ala Gly Asn Ser Ser	
261 266 271 276	
cag gtg agt gat ggg gca gct gcc atc/ctg ctg gcc cgg agg tcc aag	977
Gln Val Ser Asp Gly Ala Ala Ala Ile Leu Leu Ala Arg Arg Ser Lys	
277 282 287 292	
gca gaa gag ttg ggc ctt ccc atc ctt ggg gtc ctg agg tct tat gca	1025
Ala Glu Glu Leu Gly Leu Pro Ile Leu Gly Val Leu Arg Ser Tyr Ala	
293 298 303 308	
gtg gtt ggg gtc cca cct gac atc atg ggc att gga cct gcc tat gcc	1073
Val Val Gly Val Pro Pro Asp Ile Met Gly Ile Gly Pro Ala Tyr Ala	
309 314 319 324	
atc cca gta gct ttg caa aaa gca ggg ctg aca gtg agt gac gtg gac	1121
Ile Pro Val Ala Leu Gln Lys Ala Gly Leu Thr Val Ser Asp Val Asp	
325 330 335 340	
atc ttc gag atc aat gag gcc ttt gca agc cag gct gcc tac tgt gtg	1169
Ile Phe Glu Ile Asn Glu Ala Phe Ala Ser Gln Ala Ala Tyr Cys Val	
341 346 351 356	
gag aag cta cga ctc ccc cct gag aag gtg aac ccc ctg ggg ggt gca	1217
Glu Lys Leu Arg Leu Pro Pro Glu Lys Val Asn Pro Leu Gly Gly Ala	
357 362 367 372	
gtg gcc tta ggg cac cca ctg ggc tgc act ggg gca cga cag gtc atc	1265
Val Ala Leu Gly His Pro Leu Gly Cys Thr Gly Ala Arg Gln Val Ile	
373 378 383 388	
acg ctg cca tcc tgc tgg ccc gga gtc caa ggc aga aga gtt ggg cct	1313
Thr Leu Pro Ser Cys Trp Pro Gly Val Gln Gly Arg Arg Val Gly Pro	
389 394 399 404	
tcc cat cct tgg ggt cct gag gtc tta tgc agt ggt tgg ggt ccc acc	1361
Ser His Pro Trp Gly Pro Glu Val Leu Cys Ser Gly Trp Gly Pro Thr	
405 410 415 420	
tga catc atgggcattg gacctgccta tgccatccca gtagctttgc aaaaagcagg	1418
* 421	
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acaaaggagc tg atg gca aag aag gta gct gtg att gga gct ggg gtc 168
Met Ala Lys Lys Val Ala Val Ile Gly Ala Gly Val
1 5 10
agt ggc cta att tct ctg aag tgc tgt gtg gat gag gga ctt gag ccc 216
Ser Gly Leu Ile Ser Leu Lys Cys Cys Val Asp Glu Gly Leu Glu Pro
13 18 23 28
act tgc ttt gag aga act gaa gat att gga gga gtg tgg agg ttc aaa 264
Thr Cys Phe Glu Arg Thr Glu Asp Ile Gly Gly Val Trp Arg Phe Lys
29 34 39 44
gag aat gtg gaa gat ggc cga gca agt atc tat caa tct gtc gtt acc 312
Glu Asn Val Glu Asp Gly Arg Ala Ser Ile Tyr Gln Ser Val Val Thr
45 50 55 60
aac acc agc aaa gaa atg tcc tgt ttc agt gac ttt cca atg cct gaa 360
Asn Thr Ser Lys Glu Met Ser Cys Phe Ser Asp Phe Pro Met Pro Glu
61 66 71 76
gat ttt cca aac ttc ctg cat aat tct aaa ctt ctg gaa tat ttc agg 408
Asp Phe Pro Asn Phe Leu His Asn Ser Lys Leu Leu Glu Tyr Phe Arg
77 82 87 92
att ttt gct aaa aaa ttt gat ctg cta aaa tat att cag ttc cag aca 456
Ile Phe Ala Lys Lys Phe Asp Leu Leu Lys Tyr Ile Gln Phe Gln Thr
93 98 103 108
act gtc ctt agt gtg aga aaa tgt cca gat ttc tca tcc tct ggc caa 504
Thr Val Leu Ser Val Arg Lys Cys Pro Asp Phe Ser Ser Ser Gly Gln
109 114 119 124

Met Val Ser Leu Tyr Lys Tyr Ile Phe Pro Ala His Leu Asp Lys Ser	
349 354 359 364	
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Thr Leu Ala Cys Ile Gly Leu Ile Gln Pro Leu Gly Ser Ile Phe Pro	
365 370 375 380	
act gct gaa ctt caa gct cgt tgg gtg aca aga gtt ttc aaa ggc ttg	1320
Thr Ala Glu Leu Gln Ala Arg Trp Val Thr Arg Val Phe Lys Gly Leu	
381 386 391 396	
tgt agc ctg ccc tca gag aga act atg atg atg gac att atc aaa agg	1368
Cys Ser Leu Pro Ser Glu Arg Thr Met Met Met Asp Ile Ile Lys Arg	
397 402 407 412	
aat gaa aaa aga att gac ctg ttt gga gaa agc cag agc cag acg ttg	1416
Asn Glu Lys Arg Ile Asp Leu Phe Gly Glu Ser Gln Ser Gln Thr Leu	
413 418 423 428	
cag acc aat tat gtt gac tac ttg gac gag ctc gcc tta gag ata ggt	1464
Gln Thr Asn Tyr Val Asp Tyr Leu Asp Glu Leu Ala Leu Glu Ile Gly	
429 434 439 444	
gcg aag cca gat ttc tgc tct ctc ttg ttc aaa gat cct aaa ctg gct	1512
Ala Lys Pro Asp Phe Cys Ser Leu Leu Phe Lys Asp Pro Lys Leu Ala	
445 450 455 460	
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Val Arg Leu Tyr Phe Gly Pro Cys Asn Ser Tyr *	
461 466 471	
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agcataatgc tttgggcttt attatcttgt cagtcactac ctcctaaaga aaaaaaaaaa	1802
ggctaaaaaa aaaaacatta cattcatgtt ctaattataa attttaaagt taggtactac	1862
aggcaggggg gaaattgtaa agaattagca aaattaggct tatgtacaaa accaaaattt	1922
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agcggagaag aaagcgctcc gaagagctag agctgacact cggcgatgag ctaagacgct	180
gtttcagagc gtttgggtcc tctgaggccc cttgaccagg agtgtctctg aagatacagt	240
ccaaagaaag ttctccaaaa caaggagagc agtctgaagc tggggg atg gca aca	294
	Met Ala Thr
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gca ttg gtg agt gcc cat tcc ctg gct ccc ctg aat ctg aag aag gag	342
Ala Leu Val Ser Ala His Ser Leu Ala Pro Leu Asn Leu Lys Lys Glu	
4 9 14 19	
ggg ctt cgg gta gtg agg gag gat cac tac tct act tgg gaa cag gga	390
Gly Leu Arg Val Val Arg Glu Asp His Tyr Ser Thr Trp Glu Gln Gly	
20 25 30 35	
ttc aag ctg caa gga aac agt aaa ggc ctt gga cag gag cca ttg tgc	438
Phe Lys Leu Gln Gly Asn Ser Lys Gly Leu Gly Gln Glu Pro Leu Cys	
36 41 46 51	
aaa caa ttc agg cag ttg cgt tat gaa gag acc aca gga cct cga gaa	486
Lys Gln Phe Arg Gln Leu Arg Tyr Glu Glu Thr Thr Gly Pro Arg Glu	
52 57 62 67	
gca cta agt cgg ctc cgg gag ctc tgt caa cag tgg cta cag ccc gag	534
Ala Leu Ser Arg Leu Arg Glu Leu Cys Gln Gln Trp Leu Gln Pro Glu	
68 73 78 83	
acc cat acc aag gag cag atc ctg gag ctg ctg gtg ctg gag cag ttt	582
Thr His Thr Lys Glu Gln Ile Leu Glu Leu Leu Val Leu Glu Gln Phe	
84 89 94 99	
ctg atc atc ctg cct aag gag ctc cag gcc cgg gtg cag gag cat cac	630
Leu Ile Ile Leu Pro Lys Glu Leu Gln Ala Arg Val Gln Glu His His	
100 105 110 115	
cca gag agc agg gag gac gtg gtt gtt gtt ctg gag gat ttg cag ctg	678
Pro Glu Ser Arg Glu Asp Val Val Val Val Leu Glu Asp Leu Gln Leu	
116 121 126 131	
gat ctt gga gaa aca gga caa cag gtg gac cca gac cag cca aag aaa	726
Asp Leu Gly Glu Thr Gly Gln Gln Val Asp Pro Asp Gln Pro Lys Lys	
132 137 142 147	
caa aaa ata ctt gtg gag gag atg gcc cct ctg aaa gga gta cag gaa	774
Gln Lys Ile Leu Val Glu Glu Met Ala Pro Leu Lys Gly Val Gln Glu	
148 153 158 163	
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Gln Gln Val Arg His Glu Cys Glu Val Thr Lys Pro Glu Lys Glu Lys	

164	169	174	179	
ggt gag gag aca agg att gag aat ggg aag ctt att gta gta aca gac				870
Gly Glu Glu Thr Arg Ile Glu Asn Gly Lys Leu Ile Val Val Thr Asp				
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tct tgt gga aga gta gag tca tct ggg aaa ata tct gaa ccc atg gag				918
Ser Cys Gly Arg Val Glu Ser Ser Gly Lys Ile Ser Glu Pro Met Glu				
196	201	206	211	
gct cat aat gag ggc tct aac ttg gaa agg cat cag gcc aag ccc aaa				966
Ala His Asn Glu Gly Ser Asn Leu Glu Arg His Gln Ala Lys Pro Lys				
212	217	222	227	
gag aag att gag tat aaa tgc tca gaa cgt gag cag aga ttc atc cag				1014
Glu Lys Ile Glu Tyr Lys Cys Ser Glu Arg Glu Gln Arg Phe Ile Gln				
228	233	238	243	
cac ttg gac ctg att gaa cat gcg agt aca cac acg gga aag aaa tcc				1062
His Leu Asp Leu Ile Glu His Ala Ser Thr His Thr Gly Lys Lys Ser				
244	249	254	259	
tgc gag tct gat gtg tgt cag agt tcc agt ctt aca gga cat aag aaa				1110
Cys Glu Ser Asp Val Cys Gln Ser Ser Ser Leu Thr Gly His Lys Lys				
260	265	270	275	
gtc ctc tct aga gag aaa ggt cat cag tgt cat gag tgt ggg aaa gcc				1158
Val Leu Ser Arg Glu Lys Gly His Gln Cys His Glu Cys Gly Lys Ala				
276	281	286	291	
ttt cag agg agt tca cac ctc gtc aga cat cag aaa atc cat ctt ggt				1206
Phe Gln Arg Ser Ser His Leu Val Arg His Gln Lys Ile His Leu Gly				
292	297	302	307	
gag aag cct tat cag tgc aat gag tgt ggc aaa gtc ttt agc cag aat				1254
Glu Lys Pro Tyr Gln Cys Asn Glu Cys Gly Lys Val Phe Ser Gln Asn				
308	313	318	323	
gca ggc ctt ttg gaa cat ctc aga att cat act gga gag aaa cct tat				1302
Ala Gly Leu Leu Glu His Leu Arg Ile His Thr Gly Glu Lys Pro Tyr				
324	329	334	339	
cta tgt atc cat tgt gga aaa aat ttt agg cgc agc tct cac ctt aat				1350
Leu Cys Ile His Cys Gly Lys Asn Phe Arg Arg Ser Ser His Leu Asn				
340	345	350	355	
cga cat cag aga att cac agt cag gag gag ccc tgt gag tgc aag gag				1398
Arg His Gln Arg Ile His Ser Gln Glu Glu Pro Cys Glu Cys Lys Glu				
356	361	366	371	
tgt gga aaa acc ttt agt cag gcc tta ctc ctc acc cac cat cag aga				1446
Cys Gly Lys Thr Phe Ser Gln Ala Leu Leu Leu Thr His His Gln Arg				
372	377	382	387	
atc cat agt cac tcc aaa agc cat caa tgt aac gag tgt gga aaa gct				1494
Ile His Ser His Ser Lys Ser His Gln Cys Asn Glu Cys Gly Lys Ala				
388	393	398	403	

ttc agt ttg acc tca gac ctt att cga cac cac aga att cat act gga	1542
Phe Ser Leu Thr Ser Asp Leu Ile Arg His His Arg Ile His Thr Gly	
404 / 409 414 419	
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Glu Lys Pro Phe Lys Cys Asn Ile Cys Gln Lys Ala Phe Arg Leu Asn	
420 425 430 435	
tca cac ctt gct cag cat gta aga atc cac aat gaa gaa aaa ccc tat	1638
Ser His Leu Ala Gln His Val Arg Ile His Asn Glu Glu Lys Pro Tyr	
436 441 446 451	
cag tgt agt gaa tgt gga gaa gcc ttc agg caa agg tca ggt ctt ttt	1686
Gln Cys Ser Glu Cys Gly Glu Ala Phe Arg Gln Arg Ser Gly Leu Phe	
452 457 462 467	
caa cat cag aga tat cac cac aaa gac aaa ctg gct tga tgagggtgttc	1735
Gln His Gln Arg Tyr His His Lys Asp Lys Leu Ala *	
468 473 478	
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atattaaaat taggggcgtc cactccaaaa catatcacca gagtgacaac ttcagccctc	2755
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 Met Arg
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ctg ttc gtg agt gat ggc gtc ccg ggt tgc ttg ccg gtg ctg gcc gcc 163
 Leu Phe Val Ser Asp Gly Val Pro Gly Cys Leu Pro Val Leu Ala Ala
 3 8 13 18

gcc ggg aga gcc cgg ggc aga gca gag gtg ctc atc agc act gta ggc 211
 Ala Gly Arg Ala Arg Gly Arg Ala Glu Val Leu Ile Ser Thr Val Gly
 19 24 29 34

ccg gaa gat tgt gtg gtc ccg ttc ctg acc cgg cct aag gtc cct gtc 259
 Pro Glu Asp Cys Val Val Pro Phe Leu Thr Arg Pro Lys Val Pro Val
 35 40 45 50

ttg cag ctg gat agc ggc aac tac ctc ttc tcc act agt gca atc tgc 307
 Leu Gln Leu Asp Ser Gly Asn Tyr Leu Phe Ser Thr Ser Ala Ile Cys
 51 56 61 66

cga tat ttt ttt ttg tta tct ggc tgg gag caa gat gac ctc act aac 355
 Arg Tyr Phe Phe Leu Leu Ser Gly Trp Glu Gln Asp Asp Leu Thr Asn
 67 72 77 82

cag tgg ctg gaa tgg gaa gcg aca gag ctg cag cca gct ttg tct gct 403
 Gln Trp Leu Glu Trp Glu Ala Thr Glu Leu Gln Pro Ala Leu Ser Ala
 83 88 93 98

gcc ctg tac tat tta gtg gtc caa ggc aag aag ggg gaa gat gtt ctt 451
 Ala Leu Tyr Tyr Leu Val Val Gln Gly Lys Lys Gly Glu Asp Val Leu
 99 104 109 114

ggg tca gtg cgg aga gcc ctg act cac att gac cac agc ttg agt cgt 499
 Gly Ser Val Arg Arg Ala Leu Thr His Ile Asp His Ser Leu Ser Arg
 115 120 125 130

cag aac tgt cct ttc ctg gct ggg gag aca gaa tct cta gcc gac att 547
 Gln Asn Cys Pro Phe Leu Ala Gly Glu Thr Glu Ser Leu Ala Asp Ile
 131 136 141 146

gtt ttg tgg gga gcc cta tac cca tta ctg caa gat ccc gcc tac ctc	595
Val Leu Trp Gly Ala Leu Tyr Pro Leu Leu Gln Asp Pro Ala Tyr Leu	
147 152 157 162	
cct gag gag ctg agt gcc ctg cac agc tgg ttc cag aca ctg agt acc	643
Pro Glu Glu Leu Ser Ala Leu His Ser Trp Phe Gln Thr Leu Ser Thr	
163 168 173 178	
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Gln Glu Pro Cys Gln Arg Ala Ala Glu Thr Val Leu Lys Gln Gln Gly	
179 184 189 194	
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Val Leu Ala Leu Arg Pro Tyr Leu Gln Lys Gln Pro Gln Pro Ser Pro	
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Ala Glu Gly Arg Ala Val Thr Asn Glu Pro Glu Glu Glu Glu Leu Ala	
211 216 221 226	
acc cta tct gag gag gag att gct atg gct gtt act gct tgg gag aag	835
Thr Leu Ser Glu Glu Glu Ile Ala Met Ala Val Thr Ala Trp Glu Lys	
227 232 237 242	
ggc cta gaa agt ttg ccc ccg ctg cgg ccc cag cag aat cca gtg ttg	883
Gly Leu Glu Ser Leu Pro Pro Leu Arg Pro Gln Gln Asn Pro Val Leu	
243 248 253 258	
cct gtg gct gga gaa agg aat gtg ctc atc acc agt gcc ctc cct tac	931
Pro Val Ala Gly Glu Arg Asn Val Leu Ile Thr Ser Ala Leu Pro Tyr	
259 264 269 274	
gtc aac aat gtc ccc cac ctt ggg aac atc att ggt tgt gtg ctc agt	979
Val Asn Asn Val Pro His Leu Gly Asn Ile Ile Gly Cys Val Leu Ser	
275 280 285 290	
gcc gat gtc ttt gcc agg tac tct cgc ctc cgc cag tgg aac acc ctc	1027
Ala Asp Val Phe Ala Arg Tyr Ser Arg Leu Arg Gln Trp Asn Thr Leu	
291 296 301 306	
tat ctg tgt ggg aca gat gag tat ggt aca gca aca gag acc aag gct	1075
Tyr Leu Cys Gly Thr Asp Glu Tyr Gly Thr Ala Thr Glu Thr Lys Ala	
307 312 317 322	
ctg gag gag gga cta acc ccc cag gag atc tgc gac aag tac cac atc	1123
Leu Glu Glu Gly Leu Thr Pro Gln Glu Ile Cys Asp Lys Tyr His Ile	
323 328 333 338	
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Ile His Ala Asp Ile Tyr Arg Trp Phe Asn Ile Ser Phe Asp Ile Phe	
339 344 349 354	
ggc cgc acc acc act cca cag cag acc aaa atc acc cag gac att ttc	1219
Gly Arg Thr Thr Thr Pro Gln Gln Thr Lys Ile Thr Gln Asp Ile Phe	
355 360 365 370	
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Gln	Gln	Leu	Leu	Lys	Arg	Gly	Phe	Val	Leu	Gln	Asp	Thr	Val	Glu	Gln
371					376					381					386

ctg	cga	tgt	gag	cac	tgt	gct	cgc	ttc	ctg	gct	gac	cgc	ttc	gtg	gag	1315
Leu	Arg	Cys	Glu	His	Cys	Ala	Arg	Phe	Leu	Ala	Asp	Arg	Phe	Val	Glu	
387					392					397					402	

ggc	gtg	tgt	ccc	ttc	tgt	ggc	tat	gag	gag	gct	cgg	ggt	gac	cag	tgt	1363
Gly	Val	Cys	Pro	Phe	Cys	Gly	Tyr	Glu	Glu	Ala	Arg	Gly	Asp	Gln	Cys	
403					408					413					418	

gac	aag	tgt	ggc	aag	ctc	atc	aat	gct	gtc	gag	ctt	aag	aag	cct	cag	1411
Asp	Lys	Cys	Gly	Lys	Leu	Ile	Asn	Ala	Val	Glu	Leu	Lys	Lys	Pro	Gln	
419					424					429					434	

tgt	aaa	gtc	tgc	cga	tca	tgc	cct	gtg	gtg	cag	tcg	agc	cag	cac	ctg	1459
Cys	Lys	Val	Cys	Arg	Ser	Cys	Pro	Val	Val	Gln	Ser	Ser	Gln	His	Leu	
435					440					445					450	

ttt	ctg	gac	ctg	cct	aag	ctg	gag	aag	cga	ctg	gag	gag	tgg	ttg	ggg	1507
Phe	Leu	Asp	Leu	Pro	Lys	Leu	Glu	Lys	Arg	Leu	Glu	Glu	Trp	Leu	Gly	
451					456					461					466	

agg	aca	ttg	cct	ggc	agt	gac	tgg	aca	ccc	aat	gcc	cag	ttt	atc	acc	1555
Arg	Thr	Leu	Pro	Gly	Ser	Asp	Trp	Thr	Pro	Asn	Ala	Gln	Phe	Ile	Thr	
467					472					477					482	

cgt	tct	tgg	ctt	cgg	gat	ggc	ctc	aag	cca	cgc	tgc	ata	acc	cga	gac	1603
Arg	Ser	Trp	Leu	Arg	Asp	Gly	Leu	Lys	Pro	Arg	Cys	Ile	Thr	Arg	Asp	
483					488					493					498	

ctc	aaa	tgg	gga	acc	cct	gta	ccc	tta	gaa	ggt	ttt	gaa	gac	aag	gta	1651
Leu	Lys	Trp	Gly	Thr	Pro	Val	Pro	Leu	Glu	Gly	Phe	Glu	Asp	Lys	Val	
499					504					509					514	

ttc	tat	gtc	tgg	ttt	gat	gcc	act	att	ggc	tat	ctg	tcc	atc	aca	gcc	1699
Phe	Tyr	Val	Trp	Phe	Asp	Ala	Thr	Ile	Gly	Tyr	Leu	Ser	Ile	Thr	Ala	
515					520					525					530	

aac	tac	aca	gac	cag	tgg	gag	aga	tgg	tgg	aag	aac	cca	gag	caa	gtg	1747
Asn	Tyr	Thr	Asp	Gln	Trp	Glu	Arg	Trp	Trp	Lys	Asn	Pro	Glu	Gln	Val	
531					536					541					546	

gac	ctg	tat	cag	ttc	atg	gcc	aaa	gac	aat	gtt	cct	ttc	cat	agc	tta	1795
Asp	Leu	Tyr	Gln	Phe	Met	Ala	Lys	Asp	Asn	Val	Pro	Phe	His	Ser	Leu	
547					552					557					562	

gtc	ttt	cct	tgc	tca	gcc	cta	gga	gct	gag	gat	aac	tat	acc	ttg	gtc	1843
Val	Phe	Pro	Cys	Ser	Ala	Leu	Gly	Ala	Glu	Asp	Asn	Tyr	Thr	Leu	Val	
563					568					573					578	

agc	cac	ctc	att	gct	aca	gag	tac	ctg	aac	tat	gag	gat	ggg	aaa	ttc	1891
Ser	His	Leu	Ile	Ala	Thr	Glu	Tyr	Leu	Asn	Tyr	Glu	Asp	Gly	Lys	Phe	
579					584					589					594	

tct	aag	agc	cgc	ggt	gtg	gga	gtg	ttt	ggg	gac	atg	gcc	cag	gac	acg	1939
Ser	Lys	Ser	Arg	Gly	Val	Gly	Val	Phe	Gly	Asp	Met	Ala	Gln	Asp	Thr	

595	600	605	610	
ggg atc cct gct gac atc tgg cgc ttc tat ctg ctg tac att cgg cct				1987
Gly Ile Pro Ala Asp Ile Trp Arg Phe Tyr Leu Leu Tyr Ile Arg Pro				
611	616	621	626	
gag ggc cag gac agt gct ttc tcc tgg acg gac ctg ctg ctg aag aat				2035
Glu Gly Gln Asp Ser Ala Phe Ser Trp Thr Asp Leu Leu Leu Lys Asn				
627	632	637	642	
aat tct gag ctg ctt aac aac ctg ggc aac ttc atc aac aga gct ggg				2083
Asn Ser Glu Leu Leu Asn Asn Leu Gly Asn Phe Ile Asn Arg Ala Gly				
643	648	653	658	
atg ttt gtg tct aag ttc ttt ggg ggc tat gtg cct gag atg gtg ctc				2131
Met Phe Val Ser Lys Phe Phe Gly Gly Tyr Val Pro Glu Met Val Leu				
659	664	669	674	
acc cct gat gat cag cgc ctg ctg gcc cat gtc acc ctg gag ctc cag				2179
Thr Pro Asp Asp Gln Arg Leu Leu Ala His Val Thr Leu Glu Leu Gln				
675	680	685	690	
cac tat cac cag cta ctt gag aag gtt cgg atc cgg gat gcc ttg cgc				2227
His Tyr His Gln Leu Leu Glu Lys Val Arg Ile Arg Asp Ala Leu Arg				
691	696	701	706	
agt atc ctc acc ata tct cga cat ggc aac caa tat att cag gtg aat				2275
Ser Ile Leu Thr Ile Ser Arg His Gly Asn Gln Tyr Ile Gln Val Asn				
707	712	717	722	
gag ccc tgg aag cgg att aaa ggc agt gag gct gac agg caa cgg gca				2323
Glu Pro Trp Lys Arg Ile Lys Gly Ser Glu Ala Asp Arg Gln Arg Ala				
723	728	733	738	
gga aca gtg act ggc ttg gca gtg aat ata gct gcc ttg ctc tct gtc				2371
Gly Thr Val Thr Gly Leu Ala Val Asn Ile Ala Ala Leu Leu Ser Val				
739	744	749	754	
atg ctt cag cct tac atg ccc acg gtt agt gcc aca atc cag gcc cag				2419
Met Leu Gln Pro Tyr Met Pro Thr Val Ser Ala Thr Ile Gln Ala Gln				
755	760	765	770	
ctg cag ctc cca cct cca gcc tgc agt atc ctg ctg aca aac ttc ctg				2467
Leu Gln Leu Pro Pro Pro Ala Cys Ser Ile Leu Leu Thr Asn Phe Leu				
771	776	781	786	
tgt acc tta cca gca gga cac cag att ggc aca gtc agt ccc ttg ttc				2515
Cys Thr Leu Pro Ala Gly His Gln Ile Gly Thr Val Ser Pro Leu Phe				
787	792	797	802	
caa aaa ttg gaa aat gac cag att gaa agt tta agg cag cgc ttt gga				2563
Gln Lys Leu Glu Asn Asp Gln Ile Glu Ser Leu Arg Gln Arg Phe Gly				
803	808	813	818	
ggg ggc cag gca aaa acg tcc ctg aag cca gca gtt gta gag act gtt				2611
Gly Gly Gln Ala Lys Thr Ser Leu Lys Pro Ala Val Val Glu Thr Val				
819	824	829	834	

ccg gaa gat tgt gtg gtc ccg ttc ctg acc cgg cct aag gtc cct gtc	259
Pro Glu Asp Cys Val Val Pro Phe Leu Thr Arg Pro Lys Val Pro Val	
35 40 45 50	
ttg cag ctg gat agc ggc aac tac ctc ttc tcc act agt gca atc tgc	307
Leu Gln Leu Asp Ser Gly Asn Tyr Leu Phe Ser Thr Ser Ala Ile Cys	
51 56 61 66	
cga tat ttt ttt ttg tta tct ggc tgg gag caa gat gac ctc act aac	355
Arg Tyr Phe Phe Leu Leu Ser Gly Trp Glu Gln Asp Asp Leu Thr Asn	
67 72 77 82	
cag tgg ctg gaa tgg gaa gcg aca gag ctg cag cca gct ttg tct gct	403
Gln Trp Leu Glu Trp Glu Ala Thr Glu Leu Gln Pro Ala Leu Ser Ala	
83 88 93 98	
gcc ctg tac tat tta gtg gtc caa ggc aag aag ggg gaa gat gtt ctt	451
Ala Leu Tyr Tyr Leu Val Val Gln Gly Lys Lys Gly Glu Asp Val Leu	
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Gly Ser Val Arg Arg Ala Leu Thr His Ile Asp His Ser Leu Ser Arg	
115 120 125 130	
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Gln Asn Cys Pro Phe Leu Ala Gly Glu Glu Leu Ser Ala Leu His Ser	
131 136 141 146	
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Trp Phe Gln Thr Leu Ser Thr Gln Glu Pro Cys Gln Arg Ala Ala Glu	
147 152 157 162	
act gta ctg aaa cag caa ggt gtc ctg gct ctc cgg cct tac ctc caa	643
Thr Val Leu Lys Gln Gln Gly Val Leu Ala Leu Arg Pro Tyr Leu Gln	
163 168 173 178	
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Lys Gln Pro Gln Pro Ser Pro Ala Glu Gly Arg Ala Val Thr Asn Glu	
179 184 189 194	
cct gag gag gag gag ctg gct acc cta tct gag gag gag att gct atg	739
Pro Glu Glu Glu Glu Leu Ala Thr Leu Ser Glu Glu Glu Ile Ala Met	
195 200 205 210	
gct gtt act gct tgg gag aag ggc cta gaa agt ttg ccc ccg ctg cgg	787
Ala Val Thr Ala Trp Glu Lys Gly Leu Glu Ser Leu Pro Pro Leu Arg	
211 216 221 226	
ccc cag cag aat cca gtg ttg cct gtg gct gga gaa agg aat gtg ctc	835
Pro Gln Gln Asn Pro Val Leu Pro Val Ala Gly Glu Arg Asn Val Leu	
227 232 237 242	
atc acc agt gcc ctc cct tac gtc aac aat gtc ccc cac ctt ggg aac	883
Ile Thr Ser Ala Leu Pro Tyr Val Asn Asn Val Pro His Leu Gly Asn	
243 248 253 258	

atc att ggt tgt gtg ctc agt gcc gat gtc ttt gcc agg tac tct cgc	931
Ile Ile Gly Cys Val Leu Ser Ala Asp Val Phe Ala Arg Tyr Ser Arg	
259 264 269 274	
ctc cgc cag tgg aac acc ctc tat ctg tgt ggg aca gat gag tat ggt	979
Leu Arg Gln Trp Asn Thr Leu Tyr Leu Cys Gly Thr Asp Glu Tyr Gly	
275 280 285 290	
aca gca aca gag acc aag gct ctg gag gag gga cta acc ccc cag gag	1027
Thr Ala Thr Glu Thr Lys Ala Leu Glu Glu Gly Leu Thr Pro Gln Glu	
291 296 301 306	
atc tgc gac aag tac cac atc atc cat gct gac atc tac cgc tgg ttt	1075
Ile Cys Asp Lys Tyr His Ile Ile His Ala Asp Ile Tyr Arg Trp Phe	
307 312 317 322	
aac att tcg ttt gat att ttt ggt cgc acc acc act cca cag cag acc	1123
Asn Ile Ser Phe Asp Ile Phe Gly Arg Thr Thr Thr Pro Gln Gln Thr	
323 328 333 338	
aaa atc acc cag gac att ttc cag cag ttg ctg aaa cga ggt ttt gtg	1171
Lys Ile Thr Gln Asp Ile Phe Gln Gln Leu Leu Lys Arg Gly Phe Val	
339 344 349 354	
ctg caa gat act gtg gag caa ctg cga tgt gag cac tgt gct cgc ttc	1219
Leu Gln Asp Thr Val Glu Gln Leu Arg Cys Glu His Cys Ala Arg Phe	
355 360 365 370	
ctg gct gac cgc ttc gtg gag ggc gtg tgt ccc ttc tgt ggc tat gag	1267
Leu Ala Asp Arg Phe Val Glu Gly Val Cys Pro Phe Cys Gly Tyr Glu	
371 376 381 386	
gag gct cgg ggt gac cag tgt gac aag tgt ggc aag ctc atc aat gct	1315
Glu Ala Arg Gly Asp Gln Cys Asp Lys Cys Gly Lys Leu Ile Asn Ala	
387 392 397 402	
gtc gag ctt aag aag cct cag tgt aaa gtc tgc cga tca tgc cct gtg	1363
Val Glu Leu Lys Lys Pro Gln Cys Lys Val Cys Arg Ser Cys Pro Val	
403 408 413 418	
gtg cag tcg agc cag cac ctg ttt ctg gac ctg cct aag ctg gag aag	1411
Val Gln Ser Ser Gln His Leu Phe Leu Asp Leu Pro Lys Leu Glu Lys	
419 424 429 434	
cga ctg gag gag tgg ttg ggg agg aca ttg cct ggc agt gac tgg aca	1459
Arg Leu Glu Glu Trp Leu Gly Arg Thr Leu Pro Gly Ser Asp Trp Thr	
435 440 445 450	
ccc aat gcc cag ttt atc acc cgt tct tgg ctt cgg gat ggc ctc aag	1507
Pro Asn Ala Gln Phe Ile Thr Arg Ser Trp Leu Arg Asp Gly Leu Lys	
451 456 461 466	
cca cgc tgc ata acc cga gac ctc aaa tgg gga acc cct gta ccc tta	1555
Pro Arg Cys Ile Thr Arg Asp Leu Lys Trp Gly Thr Pro Val Pro Leu	
467 472 477 482	
gaa ggt ttt gaa gac aag gta ttc tat gtc tgg ttt gat gcc act att	1603

Glu Gly Phe Glu Asp Lys Val Phe Tyr Val Trp Phe Asp Ala Thr Ile
 483 488 493 498

ggc tat ctg tcc atc aca gcc aac tac aca gac cag tgg gag aga tgg 1651
 Gly Tyr Leu Ser Ile Thr Ala Asn Tyr Thr Asp Gln Trp Glu Arg Trp
 499 504 509 514

tgg aag aac cca gag caa gtg gac ctg tat cag ttc atg gcc aaa gac 1699
 Trp Lys Asn Pro Glu Gln Val Asp Leu Tyr Gln Phe Met Ala Lys Asp
 515 520 525 530

aat gtt cct ttc cat agc tta gtc ttt cct tgc tca gcc cta gga gct 1747
 Asn Val Pro Phe His Ser Leu Val Phe Pro Cys Ser Ala Leu Gly Ala
 531 536 541 546

gag gat aac tat acc ttg gtc agc cac ctc att gct aca gag tac ctg 1795
 Glu Asp Asn Tyr Thr Leu Val Ser His Leu Ile Ala Thr Glu Tyr Leu
 547 552 557 562

aac tat gag gat ggg aaa ttc tct aag agc cgc ggt gtg gga gtg ttt 1843
 Asn Tyr Glu Asp Gly Lys Phe Ser Lys Ser Arg Gly Val Gly Val Phe
 563 568 573 578

ggg gac atg gcc cag gac acg ggg atc cct gct gac atc tgg cgc ttc 1891
 Gly Asp Met Ala Gln Asp Thr Gly Ile Pro Ala Asp Ile Trp Arg Phe
 579 584 589 594

tat ctg ctg tac att cgg cct gag ggc cag gac agt gct ttc tcc tgg 1939
 Tyr Leu Leu Tyr Ile Arg Pro Glu Gly Gln Asp Ser Ala Phe Ser Trp
 595 600 605 610

acg gac ctg ctg ctg aag aat aat tct gag ctg ctt aac aac ctg ggc 1987
 Thr Asp Leu Leu Leu Lys Asn Asn Ser Glu Leu Leu Asn Asn Leu Gly
 611 616 621 626

aac ttc atc aac aga gct ggg atg ttt gtg tct aag ttc ttt ggg ggc 2035
 Asn Phe Ile Asn Arg Ala Gly Met Phe Val Ser Lys Phe Phe Gly Gly
 627 632 637 642

tat gtg cct gag atg gtg ctc acc cct gat gat cag cgc ctg ctg gcc 2083
 Tyr Val Pro Glu Met Val Leu Thr Pro Asp Asp Gln Arg Leu Leu Ala
 643 648 653 658

cat gtc acc ctg gag ctc cag cac tat cac cag cta ctt gag aag gtt 2131
 His Val Thr Leu Glu Leu Gln His Tyr His Gln Leu Leu Glu Lys Val
 659 664 669 674

cgg atc cgg gat gcc ttg cgc agt atc ctc acc ata tct cga cat ggc 2179
 Arg Ile Arg Asp Ala Leu Arg Ser Ile Leu Thr Ile Ser Arg His Gly
 675 680 685 690

aac caa tat att cag gtg aat gag ccc tgg aag cgg att aaa ggc agt 2227
 Asn Gln Tyr Ile Gln Val Asn Glu Pro Trp Lys Arg Ile Lys Gly Ser
 691 696 701 706

gag gct gac agg caa cgg gca gga aca gtg act ggc ttg gca gtg aat 2275
 Glu Ala Asp Arg Gln Arg Ala Gly Thr Val Thr Gly Leu Ala Val Asn